DOCUMENT RESUME

ED 237 051 HE 016 887

AUTHOR Adelman, Clifford; Reuben, Elaine
TITLE Starting with Students: Notable Programs, Promising Approaches, and Other Improvement Efforts in American Postsecondary Education. Volume I.
INSTITUTION National Commission on Excellence in Education (ED), Washington, DC.
PUB DATE Dec 83
NOTE 111p.; Prepared from materials submitted to the National Commission on Excellence in Education. For related documents, see ED 226 006, ED 227 094, HE 016 788-804 and HE 016 814.
PUB TYPE Reports - Descriptive (141) -- Collected Works - General (020)

EDRS PRICE MF01/PC05 Plus Postage.
DESCRIPTORS Academically Gifted; Articulation (Education); Career Education; College Freshmen; *College Instruction; *College Programs; College School Cooperation; College Students; *Demonstration Programs; *Educational Quality; Expectation; General Education; High Schools; Honors Curriculum; Letters (Correspondence); Liberal Arts; Models; Nonmajors; Outreach Programs; *Postsecondary Education; Scientific Literacy; Student Recruitment; Teacher Education; Teacher Exchange Programs; Teacher Improvement; Technological Literacy
IDENTIFIERS *Excellence; National Commission on Excellence in Education

ABSTRACT

A total of 117 descriptions of notable programs and promising practices related to 30 specific problems, practices, and goals in American postsecondary education are presented. The programs described are the result of three searches made by the staff of the National Commission on Excellence in Education, although neither the staff nor the Commission has validated these programs. Responses to the Commission searches were voluntary. The programs reported are divided into seven parts: (1) the transition from secondary to postsecondary education: school/college cooperation (reallocation of academic time and content; outreach and recruitment; and the exchange and development of academic personnel); (2) the freshman year: the rite of passage; (3) competing models of general/liberal education; (4) the reconciliation of liberal arts and career education; (5) postsecondary honors programs/programs for the gifted; (6) scientific and technological literacy for the non-science major; and (7) teacher education: selection and training in the disciplines. The purposes, focus, methods, and limitations of this collection are outlined in introductory remarks. Appended are guidelines for preparing program profiles, the text of the letter of invitation for the second search, and the American Council on Education letter and listing of topics. (LB)

ED237051

STARTING WITH STUDENTS:

Notable Programs, Promising Approaches, and Other Improvement Efforts in American Postsecondary Education

Volume I

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Clifford Adelman
National Institute of Education

with the assistance of
Elaine Reuben

Prepared from Materials Submitted to the
National Commission on Excellence in Education

December, 1983

(Volume II of this document will be issued in March, 1984)

HE 016 827

To Franklin Patterson

without whose wise counsel I never could have learned enough
about the ways of education to pretend to contribute to its improvement;
without whose friendship I never would have been in a position
to communicate that learning.

ACKNOWLEDGEMENTS

I am deeply indebted to a number of individuals and organizations for their support and assistance in this project.

Foremost, to the National Commission on Excellence in Education for encouraging this effort, and to Commissioners Norman Francis, Annette Kirk, Ann Campbell, Richard Wallace, Arleigh Foster, Emeral Crosby and Margaret Marston who provided helpful feedback at various stages of the project.

Equally, to other members and former members of the Commission staff who assisted on different aspects of the project: Betty Baten (contracts), Carol Foley (secretarial), Antione Garibaldi (design), Peter Gerber (design), Drew Lebby (profile guidelines), and Penny MacDonald (dissemination issues). A special note of thanks is due Milt Goldberg, Executive Director of the Commission, not only for putting up with me for 18 months on the Commission staff, but also for his constant support of this and other projects and for his careful reading and wise responses to the materials.

Equally, too, to Elaine Reuben, without whose rough drafts and smooth judgments this task might have taken a great deal longer to complete.

I am also grateful to Manuel Justiz, Director of the National Institute of Education and Sharon Horn, Associate Director for NIE's Division of Education Policy and Organization for allowing me the time to complete this project after my detail to the National Commission staff was over.

A number of individuals at national organizations provided critical aid in support of this project: Jack Peltason, Bob Atwell and Nellie Menick at the American Council on Education; Mark Curtis and Dianne Haddick at the American Association of Colleges; Russ Edgerton and Ted Marchese at the American Association for Higher Education; Harold Delaney and Karen Hager at the American Association of State Colleges and Universities; Dale Parnell at the American Association of Community and Junior Colleges; Jim Keefe and Doug Hunt at the National Association of Secondary School Principals; Jim Gates at the National Council of Teachers of Mathematics; and former staffers Bob Fullilove and Richard Hendrix from the Fund for the Improvement of Postsecondary Education.

But these volumes would never exist without the extraordinary care with which hundreds of college faculty and administrators prepared and submitted profiles and essays on their programs. They may not admit it, but there was much love in their efforts, and a dedication that can only bode well for the learning and growth of students.

CONTENTS

Volume I

Acknowledgements

Introduction: Purposes, Focus and Methods — i - ix
What Do We Have Here?
The Limitations of this Document
Where to from Here?

Part A: The Transition from Secondary to Postsecondary Education: School/College Cooperation — 1

Section 1: The Reallocation of Academic Time and Content — 2

1. Matteo Ricci College: Time Condensed Baccalaureate
2. Simon's Rock of Bard College: the Early College
3. Clarkson College: the Clarkson School
4. Syracuse University et al: Project Advance
5. University School: Kenyon Program
6. Clackamas Community Coll.: Alternate College Credit
7. Univ. of Pittsburgh: College in High School
8. C.W.Post/Long Island Univ.: Project FAST
9. University of Iowa: Secondary Student Training
10. Appalachian State Univ.: Admissions Partnership
11. Staten Island Continuum of Education: BRIDGE Program
12. Henderson County Jr. Coll.: Concurrent Enrollment
13. and 14. University of Iowa (2): Gifted and Talented Performing Arts
15. Univ. of South Florida: Summer Gifted Programs
16. Michigan Technological Univ.: Women in Engineering
17. Clemson University: Careers Workshop
18. Academy of the Sacred Heart: Final Project
19. Orange High School: Senior Project

Others in this category: King College, East Carolina University Beloit College, Hawthorne High School, N. Y. City Technical College, Univ. of Tennessee at Knoxville, SUNY at Geneseo

Section 2: The Raising of Expectations: Outreach and Recruitment — 13

20. Ohio State Univ.: Early Mathematics Placement
21. Univ. of Wisconsin/Parkside: Project CHAMP
22. La Guardia Community Coll.: Middle College High School
23. City Coll. of New York: Select Prog. Sci. & Engineering
24. Will. Paterson Coll. of N.J.: Pre-Professional Outreach
25. Jefferson Community College: Recruitment/Retention
26. Muskegon Community College: Pre-Admissions Project
27. Edinboro State College: Trial Admissions Program
28. Xavier Univ. of Louisiana: Project SOAR
29. Univ. of Illinois at Chicago: Early Outreach
30. St. Edwards' Univ.: Migrant Attrition Prevention

31. City Univ. of New York: Articulation Programs

Others in this category: U.C.L.A., Long Island University, Univ. of Oklahoma at Oklahoma City, Pace University, St. Edwards' Univ., Phila. College of Osteopathic Medicine

Section 3 : The Exchange and Development of Academic Personnel 22

32. National Humanities Faculty: Visiting Faculty Program
33. Illinois Inst. of Tech.: CHIP/Ill. State Physics Project
34. Herbert Lehman College/CUNY: Writing Teachers' Consortium
35. Calif. Council for the Humanities: Humanists in the Schools
36. Univ. of Penn. et al: Strengthening the Humanities
37. Univ. of Calif. at Irvine: I Love Science

Part B: The Freshman Year: the Rite of Passage 26

38. Univ. of South Carolina: University 101
39. SUNY at Plattsburgh: Freshman Seminar
40. New School for Social Research: Freshman Seminars
41. Illinois Central College et al: Project COMPAS
42. Bloomfield College: Freshman Core Program
43. St. Edwards' Univ.: Directed Listening Skills
44. Loyola Univ. of Chicago: Science Anxiety Clinic
45. Marymount Coll. of Virginia: Change-Facilitator Model
46. Winston-Salem State Univ.: Supplemental Education
47. Hood College: Admissions Seminar
48. Univ. of Nebraska/Omaha: Goodrich Scholarship Prog.
49. Pace University: Challenge to Achievement
50. Salem State College: Aves. to Successful Communication

Others in this category: Davenport College, Denison Univ.

Part C: Competing Models of General/Liberal Education 36

51. SUNY at Stony Brook: Federated Learning Communities
52. SUNY at Potsdam: School-within-the-School
53. Miami University: School of Interdisciplinary Studies
54. Pacific Lutheran Univ.: Integrated Studies Program
55. University of Iowa: Unified Program
56. University of Iowa: Literature, Science and the Arts
57. College of the Holy Cross: Interdisciplinary Studies
58. University of Utah: Liberal Education Program
59. St. Joseph's College: Core Curriculum
60. Mount Ida College: Bachelor of Liberal Studies
61. Sacramento City College: Project HELP
62. Lafayette College: Senior Interdisciplinary Program
63. Lynchburg College: Senior Symposium
64. Maharishi Internat. Univ.: Holistic Development Prog.
65. Northeastern Univ.: Competency-Based Western Civ. Prog.

Others in this category: Wheaton College, Ohio University, George Mason University

Part D: The Reconciliation of Liberal Arts and Career Education 49

66. Smith College: Dual Degree/Lib. Arts and Engineering
67. Arkansas College: Historic Preservation Curriculum
68. SUNY at Binghamton: M.B.A./Arts
69. Univ. of South Florida: M.A. in Applied Anthropology
70. Northeastern Univ : Humanities and the Professions
71. Albion College: Lib. Arts in Professional Management
72. St. Mary College: B.S. in Nursing for R.N.s
73. Providence College: Social Work Curriculum
74. Stockton State College: Speech Pathology Program
75. Tri-Colleges (Iowa): the Tri-College B.A.
76. Queen's College (N.C.): Women's Leadership Program
77. University of Cincinnati: Co-op Ed/Arts & Sciences
78. University of Virginia: Career Opportunities Institute

Others in this category: Notre Dame University, University of Iowa, Pace University, Albion College

Part E: Postsecondary Honors Programs/Programs for the Gifted 62

79. Washington State University: General Honors
80. University of Utah: Honors Program
81. University of Delaware: Honors Program
82. University of Nebraska at Omaha: Honors Program
83. Xavier University (Cincinnati): Honors A.B.
84. Tennessee State Univ.: University Honors
85. Kearny State College: Horizons
86. University of Iowa: Honors Program
87. Univ. of Colo. at Colorado Springs: Psychology Honors
88. William Paterson College of N.J.: Biopsychology Honors
89. University of Alabama: Computer-Based Honors Program
90. Syracuse University: University Honors Program
91. University of Georgia: Honors Program
92. Edinboro State Coll.: Program of Honors Studies
93. Swarthmore College: Honors Program
94. John C. Calhoun Community College: Honors Program
95. Tidewater Community College: Honors Curriculum
96. Loyola Univ. of Chicago: Honors Program
97. Indiana Univ. of Pennsylvania: Program for Scholars
98. Utah State Univ.: Space Science Students Program
99. Mass. Inst. of Technol.: Undergrad. Research Opportunities
100. Inter American Univ. of Puerto Rico: Honors Program

Others in this category: Univ. of Kansas, Notre Dame College of Ohio, Catholic Univ. of Puerto Rico, Hunter College/CUNY.

Part F: Scientific and Technological Literacy for the Non-Science Major 77

101. Univ.of Notre Dame: Computer Applications Second Major
102. Wheaton Coll. (Mass.): Computer Literacy Project
103. Wesleyan University: Science and Society

104. Bowling Green State Univ.: Value in Technological Culture
105. Lehigh University: Science, Technology and Society
106. Univ. of Calif. at Irvine: Scientific Literacy
107. SUNY at Cortland: Learning Cycle Laboratory
108. South Oklahoma City Jr. College: Tutoring Physics

Part G: Teacher Education: Selection and Training in the Disciplines 84

109. Millersville State College: Cadet Teaching
110. Chadron State College: Profess. Educators Honorarium
111. Univ. of Louisville: Teacher Selection Program
112. Princeton University: Teacher Preparation Program
113. University of Dayton: Teacher Education
114. University of Oregon: Training for Mainstreaming
115. Univ. of West Florida: Field-Based Certification Program
116. University of Delaware: Master of Instruction
117. Univ. of Calif. at Irvine: Teacher Intern Program

Appendix A: Guidelines for Preparing Program Profiles 91
Appendix B: Text of Letter of Invitation: Second Search 92
Appendix C: ACE Letter and Listing of Topics 94

Volume II

Introduction

Part H: Variations on Academic Time
Part I: Retention Strategies and Academic Work
Part J: Uses of Instructional Technology (outside science and math)
Part K: Trends in Postsecondary Science Education
Part L: Language: Expanding Personal Space
Part M: Special Programs for Private Sector Employees
Part N: The Preparation and Development of College Teachers
Part O: Distinguished Miscellany
Part P: Assessment: the Bottom Line

Postscript

Appendix D: Index of Numbered Reviews; Contact Persons

STARTING WITH STUDENTS:
Notable Programs, Promising Approaches and Other Improvement Efforts in American Postsecondary Education

Introduction: Purposes, Focus, and Methods

The impetus for this project lay in the Charter of the National Commission on Excellence in Education, and specifically in the charge to the Commission by Secretary of Education, T.H. Bell, "to review and to describe educational programs that are recognized as preparing students who . . . meet with uncommon success the demands placed on them by the nation's colleges and universities."

With the assistance of a variety of organizations, the staff of the Commission thus conducted three searches for examples of notable programs and promising approaches to thirty (30) specific problems, practices and goals in American postsecondary education.

The process of these searches is described below, but it should be noted here that each sought profiles of programs, prepared by their directors in such a way as to cover 11 key questions designed to help us understand their purpose, content, organization, impact and transferrability (see Appendix A). It is thus important to point out that neither the Commission nor its staff was in any position to validate these programs. Our purpose was not to place the "Good Housekeeping Seal of Approval," so to speak, on the materials prepared and submitted by others. Nonetheless, in reviewing the materials, we did make some judgments regarding the quality of the claims for the effectiveness of those programs; and where the evidence was convincing, we sought to learn what made successful programs work in different settings.

Why Postsecondary Programs?

While the Commission focused its final report principally on secondary education, its background work was much broader in scope and paid considerable attention to postsecondary matters. That background work, in fact, was organized by topic and not by level of schooling. Indeed, when the Commissioners began to write A Nation at Risk, they first sifted all the testimony and evidence they had gathered through such rubrics as Credentials and Credentialism; Testing, Evaluation and Assessment; Mathematics and Science Education; Governance and Leadership; Curriculum: Common and Diverse; the Education of Special Populations; and Civic Education. Earlier in their work, the Commissioners determined that a number of these topics could be considerably illuminated by consideration of their postsecondary dimensions.

Besides, one could infer from the vast collection of testimony, commissioned papers and other evidence gathered by the Commission that:

1) The hopes and expectations of individual students and parents are usually focused on the upper end of the continuum of American education;

2) Our society and economy have made a postsecondary degree the basic qualifying credential for a growing list of occupations; and that the distinction between compulsory and necessary schooling may only be that between de jure and de facto;

3) Thus, over 70% of every high school graduating class today will eventually attend a postsecondary institution for one or more years;

4) Evolutions and revolutions in the content of the disciplines originate in colleges and universities, are first tried out in postsecondary contexts, and then filter down into the system through textbooks, professional associations and learned societies--all of which are dominated by college faculty;

5) College faculty set the standards of content for examinations (SATs, ACTs, College Board Achievement Tests) that, in turn, function as de facto statements of expectations for teaching and learning in secondary schools (even though such examinations are intended to serve predictive purposes);

6) Not only college admissions requirements, but also college exit standards have a great influence on secondary school curricula and patterns of high school student course-taking;

7) Colleges and universities train not only the teachers but also the administrators of schools; and both teachers and administrators bring the learning and values of higher education to bear on the operation of schools;

8) Colleges and universities educate the vast majority of school board members, legislators and other community leaders who are charged with making decisions concerning what obtains in schools.

Thus, to understand current practices in higher education is to begin to come to grips with a critical chain of influence in American education. It is no wonder that Secretary Bell's first charge to the Commission wisely was "to review and synthesize the data and scholarly literature on the quality of learning and teaching in the nation's schools, colleges, and universities . . . ." [italics mine]. In fact, this project was designed to help the Commission fulfill its obligations under that charge.

Why Focus on Programs?

The Commission was interested in identifying those variables affecting educational performance which could be altered in practical and efficient ways. Discussions among Commissioners and staff singled out four major factors in this task: (1) the diversity of students (abilities, background, and interests); (2) the diversity of

institutional types and environments (for which the range is much greater in postsecondary education than at the school level); (3) the variety of measurements of success; and (4) programs and strategies, i.e. specific pedagogical approaches, courses of study, manipulations of requirements, variations in organization etc. that are directed at different types of students in different kinds of institutions. The Commissioners generally agreed that only two of these factors are truly alterable: measurements and programs. But since programs and their objectives (should) determine measurements, the primary focus of our project reinforced the thrust of Secretary Bell's charge.

For example, assume that a "selective" college uses an honors program to advance the performance of students who are already gifted more than would otherwise be expected. While one might explain the result with reference to the institutional environment itself, what really does the job of motivating, engaging and teaching the students is the program and its faculty. Likewise, an open-enrollment college may employ a particular tutorial strategy across the entire institution to enhance the performance of average students more than would otherwise be expected. Neither the entering ability of the students nor the institutional admissions policy (which may be set by state law) are alterable. But the strategy can be manipulated to yield even better results.

How Did we Search? What Problems and Topics were Addressed?

Our first task was to design a procedure for generating information on programs that would take us beyond "dog-and-pony-shows" to the deeper understandings required by the Commission. After consultation with a number of experts in dissemination and program evaluation, and with reference to both the existing literature and educational practice, we developed a guideline for the preparation of program "profiles." The 11 issues covered on that guideline allowed program directors to define and describe:

- The problem addressed by the program and the ways in which that problem was identified;
- The objectives of the program and their underlying theories;
- The specific population(s) for whom the program was developed;
- Essential characteristics of the program (who? what? where? when? how? etc.) and the assumptions underlying them;
- Program results: not merely concrete evidence of student achievement, but some empirical indication of how that achievement exceeds the normal expectations for the target student population;
- Secondary benefits of the program (for the institution, its faculty, its service district, etc.);
- Transportable features of the program, and an estimate of barriers to success that might exist in other settings.

Using this guideline, the first search was a modest trial heat. We chose the Commission's public hearing on Science and Mathematics education (at Stanford University, March 11, 1982) as the occasion.

Our objective was to provide the Commissioners with sufficient background material so that they could come to the hearing with a feel for what different kinds of colleges were doing to improve science education for students of varying levels of ability. It was understood that if the Commissioners found that this process yielded helpful information, we would repeat it on a larger scale and with reference to other issues.

Due to limitations of time and our own desire to deal with a finite number of programs, we asked some national organizations and agencies to identify programs they felt might be worth examining. Approximately 35 programs were so identified and invited to submit profiles. Over half did so, a very gratifying rate of response. An analytical summary of what we received was prepared, along with abstracts of a sample of the profiles.

Having analyzed the results of this trial search, the guidelines were adjusted. A slightly different procedure was then used for the second search. Again, the impetus was a public hearing of the Commission, this time on "College Admissions and the Transition to Postsecondary Education (held at Roosevelt University in Chicago on June 23, 1982). In preparation for that Hearing, we engaged in a special focus search for programs addressing problems associated with the transition to higher education, particularly those programs involving cooperative relationships between high schools and colleges. We were specifically interested in:

- o Variations on academic time, e.g. time-shortened degrees or diplomas;
- o Exchange or movements of students and faculty, e.g. high school students on college campuses (split-day, Saturdays, full-time, etc.) or college faculty teaching or advising in high schools;
- o Curricular articulation, i.e. cooperative efforts in the disciplines involving both high school and college faculty in the development of unified curricula that lead from the secondary to the postsecondary level;
- o Special post-matriculation programs that emphasize student adaptation to higher education and its demands;
- o Special pre-matriculation student service programs, including orientation, counseling, advisement, and other support services;
- o Better information for students and/or parents concerning the nature and demands of higher education and/or the environment and processes of colleges and universities.

The method of search, though was different, First, drawing on the files of the National Association of Secondary School Principals, the Academy for Educational Development, the Fund for the Improvement of Postsecondary Education and others, the staff identified approximately 50 programs which were then invited by letter to submit profiles (see Appendix B). Second, an announcement of the search was printed--in full or in part--in the regular publications of such organizations as the American Association for Higher Education, the American Association of State Colleges and Universities, and the American Association of Colleges. The announcement invited program directors to contact the

staff. During telephone conversations with the 60 program directors who did so, it was mutually determine whether it would be both profitable for the Commission and worth the program director's time to develop a full profile. Roughly half of the individuals to whom I spoke subsequently developed and submitted appropriate documents.

One consequence of the standards implicit in the profile guide was reflected in the type of responses received in the course of this second search: those program directors who could demonstrate persistent success took the time to write up profiles or presented information in forms that basically answered all the questions; whereas program directors who could not demonstrate persistent success (which is not a negative judgment on the promise of their programs) sent other types of materials or decided not to accept the invitation.

The Commission received information concerning 40 programs in this search; and staff provided the Commissioners with analytical abstracts of all 40 in a document that also described the process.

After the Chicago hearing, after the Commission had received a dozen commissioned papers on a variety of postsecondary issues, and after special Commission seminars on "Performance Expectations in American Education" and "College Curriculum: Shape, Influence and Assessment," the American Council on Education was contracted to undertake our third--and most comprehensive--search for notable and promising programs. In the course of the hearings and seminar discussions, as well as those of meetings of the full Commission, a number of questions arose that were of particular relevance to the analysis of American education that was emerging from all the Commission's work. On the postsecondary level, we decided to deal with our information needs in those areas by looking at programs.

In September of 1982, the ACE put together a letter and package (see Appendix C) that was sent to 3300 presidents of colleges, community colleges, universities, and technical institutes. The package provided a list of 22 topics in which we were interested, the guidelines for profiles and a sample profile received in one of the earlier searches. The college presidents evidently assigned the task of responding to other academic officers or faculty. Each institution thus decided whether and what to submit; but, given some unfortunate wording in the covering letter, I suspect that the nature and number of submissions from any one institution probably reflected organizational processes more than the totality of improvement efforts.

By such means, though, the ACE collected nearly 250 profiles and other communications concerning programs from approximately 150 institutions of all kinds in 35 states. It is this collection that forms the core of what is summarized in this volume. While vast, the collection is hardly inclusive--nor is it intended to be. We never set out with the expectation that we would hear about every program in the country that somebody thought was noteworthy. For better or for worse, what we have here should not be taken as a full portrait of American higher Education.

What Do We Have Here?

As one might expect, there is an extraordinary range in the quality of the documents and in the apparent quality of the programs presented to the Commission in all three searches. Some of these programs appear to be landmarks in the improvement of American education and speak eloquently to the emerging themes and particulars of the national discussion stimulated by A Nation at Risk. Other profiles and documents are no less instructive in their unintentional revelation of the occasional paucity of imagination in American higher education and the difficulty it has in describing both the objectives and effects of its work.

After all, given the wording of Secretary Bell's charge to the Commission, we were most interested in measures of program success (particularly measures of student learning); and our unwritten guideline in judging those measures was only that they be appropriate to the objectives of a program or strategy.

While we were not rigid, this is an area in which higher education is very weak. Education program design is hardly a science, but the relationship between what one intends and what one does has to be concrete and clear. If you say you are teaching "critical thinking," it is reasonable for an outsider (let alone a student) to ask how you define "critical thinking" and how it is manifest in discrete teaching and learning activities in a course or program. Unfortunately, there were too many instances in these profiles in which objectives were vague, operations were generalized, and/or the relationship between objectives and operations was unclear.

Likewise, one has to demonstrate success, not claim it; one has to present adequate and appropriate evidence, not intuitions, "vibrations," or self-assessments. And while there may be multiple measures of program success (not all of them quantitative or textbook models of pre/post assessment), some are more convincing than others. The reader will note that I place considerable emphasis on these issues in the reviews.

Indeed, the "analytical abstracts," as we called them, evidence the character of reviews more than that of mere summaries. This was a pattern we set very early in the process, and with the intention of helping the Commissioners discern what is appropriate to context and constituency, what is hackneyed, and what is creative. In keeping with that intention, I take full reponsibility for all the judgments (and there are plenty of them) offered in these pages. No matter what degree of quality one confronts in these documents, as a body, they provide some extraordinary roadsigns for reform.

What Programs are Reviewed Here? And How?

We have not reviewed all the programs on which we received information. Our first decision was to separate out those submissions that were

either unworkable (e.g. two volumes of curricular materials with a one paragraph covering letter) or insufficient (e.g. a two paragraph letter or a printed brochure or somebody's convocation speech). None of these are reviewed. Programs in the planning stages were not reviewed, nor were general statements of institutional mission.

Approximately 10% of the profiles submitted through the ACE search described programs in graduate and professional schools. While graduate education was not an explicit interest of the Commission, some of these programs illustrate promising and transferrable approaches to more generic issues, and hence are reviewed. Others are not, and on the grounds that to do so would be to paint too limited a picture of the vast enterprise of graduate and professional education in America.

The materials that remined first had to be read and organized in categories such that a brief but coherent introduction could be written for each. Since we were blending profiles from all three searches, we reconstituted ACE's distribution, and, in the process, reduced the number of categories from 30 to 15. This condensation presented some problems in placing individual profiles. For example, a freshman year community college program employing instructional technology in the teaching of writing could have been placed in any one of four categories. I tried to be consistent by analyzing a program under the rubric it best illustrated best or (where there was no clear choice) by placing it under a category indicated by the covering letter. If I used the covering letter, some tough judgments occasionally resulted. For example, if the letter claimed that a program was an exemplary case of the "reconciliation of career and liberal arts education," then one looks for the reconciliation. If I did not find it, I said so.

The introductory essays are intended to highlight the tenor of the materials received, the strengths and weaknesses of the evidence, and/or the general character of the problems addressed. These essays do not set out to be comprehensive, nor to review the extant literature. As in the case of the abstracts, a reviewer is inevitably stimulated by some issues more than others. No report such as this can be value-free.

The materials to be reviewed in most categories were of three types: (1) those presenting information sufficient to write a substantive analysis; (2) those that lacked adequate information on key issues or which were excessively confusing; and (3) those describing programs implemented so recently that results were not yet apparent. Programs in the first group received full write-ups and are numbered. With few exceptions, programs in the other two groups received shorter treatments and are not numbered. We made this distinction not to judge the first group of programs successful and the others less so, rather because the reader who is interested in further information should be referred to those who can obviously provide it. The contact persons for all numbered programs are listed in Appendix D (at the end of Volume II).

Unless indicated in an introductory essay to a section, no interpretation should be made of the order in which reviews are presented.

There was a division of labor in writing the abstracts. Elaine Reuben, a Washington-based educational consultant, was contracted to provide rough drafts of a number of abstracts. Where her drafts became largely the final form of the review, the fact is so indicated by her initials (ER). Some 143 programs from 119 colleges, community colleges, and universities are reviewed in Volume I. Volume II will include reviews of an additional 100 programs.

Limitations of this Document

Like many such efforts, this is an imperfect document.

The fundamental frustration lies in working from representations of programs, rather than direct observation. The constraints of time, too, prevented us from retrieving missing information or holding long telephone discussions with 300 program directors asking them what certain statements in the profiles meant. The form of judgment, then, is aesthetic: one has to read and interpret the profiles as artifacts.

Furthermore, the searches unfortunately did not cover some topics that were pertinent to the Commission's line of inquiry. Academic advisement is one that stands out in this regard, though it turns up indirectly in many programs. The searches also failed to highlight certain pedagogical approaches such as mastery learning or contract learning--though, again, these turn up in some profiles.

Third, there are issues covered in the profiles that I have neither reported nor assessed in the reviews. Questions concerning resources, barriers to success, organizational influence and transferrability were included in the guidelines, and about a third of the profiles provided a rich body of information on those issues. Many of the programs described here also received their seed funding from Federal and state agencies and foundations. While the role of "soft money" is an important one, I felt that this document ought to emphasize educational, rather than managerial and fiscal, considerations. But it is for such reasons that we provide the names and addresses of program directors in Appendix D: if the reader is intrigued enough to seek further information on how they did it, that Appendix should help.

Fourth, despite condensing our categories from 30 to 15, the evidence in some areas is insufficient to draw conclusions about the major trends or quality of current improvement efforts in American higher education. We would not want to judge teacher education in America from the nature of the profiles we received, and we certainly would not want to judge the preparation of future college professors for their teaching duties from the limited number of profiles addressing that topic.

No matter how broad the coverage of this undertaking, then, I urge the reader not to use these volumes as a touchstone. For all of us know of many innovative programs and efforts addressing these topics that are not included because we did not hear from them. Response to any of our solicitations, after all, was wholly voluntary.

On this last--and very important--point, John Wisdom's metaphor for the relationship between language and knowledge may be a fitting conclusion. Our language, he said, is like a net. We cast that net in a sea (a universe) filled with an infinite variety of fish (objects of knowledge), some of which we can know. But what we wind up knowing is dependent on the net of our language and the way we cast it, not what is in the sea.

Where to From Here?

The spotlight turned on by the National Commission on Excellence has now started to focus on the need for reform in postsecondary education. The vision of the learning society set out in A Nation at Risk was clearly intended to stimulate an extension of the Commission's work across the entire continuum of American education.

Improvement rests upon knowledge. Compared to what we know about schools, we are naked in our knowledge of postsecondary institutions. Our data series are often not comparable, anecdotal information often substitutes for wisdom, and in our ignorance we tend to take a very complacent "I'm-all-right, Jack" attitude about the house of higher education. In the course of its work, the Commission examined some of the results of that complacency in the declining test scores of college graduates and in the testimony of major employers, private and public, concerning the necessity for the re-education and re-training of those graduates.

In part to assess the existing knowledge base, and in part to recommend ways to utilize that knowledge in the improvement of postsecondary education, the Director of the National Institute of Education, Dr. Manuel Justiz, appointed a panel in September of 1983 to extend the spirit of the Commission's work. Known as the "Study Group on the Conditions of Excellence in American Higher Education," this panel will report to all of us in 1984 in two ways that are very appropriate in light of this document: (1) it will look at the background papers on higher education (including this one) used by all the recent commissions, will assess the major gaps in our knowledge, and will recommend which gaps should be filled first, who should do it, and how; (2) it will then provide a "blueprint" to those who would undertake reform efforts such as many described in these pages, a blueprint for how to get there--from here. That ought to be a good start. Where we all take the suggestions of this Study Group may well determine the shape and quality of American higher education a decade from now.

PART A:

THE TRANSITION FROM SECONDARY TO POSTSECONDARY EDUCATION: SCHOOL/COLLEGE COOPERATION

In preparation for its June 23, 1982 hearing in Chicago on the topic of "College Admissions and the Transition from Secondary to Postsecondary Education," the Commission initiated a special search for notable programs and promising approaches to problems associated with the transition from secondary to postsecondary education, particularly those programs involving cooperative efforts of schools and colleges.

The Commission received information, in one form or another, concerning 40 programs for this particular search. In our subsequent (and more comprehensive) search for notable programs across the range of issues in postsecondary education cited at the outset of this document, we received an additional 20 profiles dealing with one mode or another of school/college cooperation and/or post-matriculation aspects of the transition issue.

There are a number of frameworks within which this material could be organized and presented. Our first decision was to separate out post-matriculation programs operated wholly by colleges and community colleges (that is, with no secondary school participation), and directed at the very significant problems associated with student adaptation to the college environment and curriculum. Abstracts of those profiles appear in the following section, "The Freshman Year: The Rite of Passage."

For the substantial material that remained, we used two principles to determine our presentation. The first was indirectly suggested by the Commissioners themselves. That is, to organize their analysis of American education, the Commissioners chose the concepts of Time, Content, Expectations, Teaching, and Leadership; and we saw those five concepts reflected in these profiles of school/college programs addressing issues involving the transition from one level of education to another. The second was the cui bono (who benefits?) principle. In a matrix, the two generated the following analytical framework:

- o The Reallocation of Academic Time and Content: time-condensed degrees, expanded learning, college credits in high school, and similar programs directed at high school students who have pretty much made up their minds to go to college and who generally have demonstrated the ability to do so.

- o The Raising of Expectations: Outreach and Recruitment: a variety of pre-matriculation strategies designed to motivate and prepare disadvantaged, under-prepared and/or poorly counselled students for postsecondary education, to track them into demanding academic programs, to recruit them into college, and to retain them once they are there.

- o The Exchange and Development of Academic Personnel: programs that seek both to eliminate redundancies in the secondary and

postsecondary curriculum and to enrich the content of the secondary school curriculum by using college faculty in secondary schools or through cooperative (secondary/postsecondary) faculty development projects in specific academic disciplines. In these programs, students are the secondary beneficiaries.

To be sure, some of the programs reviewed below can fall into more than one of these categories; and there is no question that the categories themselves are rather broad. Thus our procedure will be to take them seriatim, to expand on what seems to be at issue in each, and then to provide abstracts of those programs we feel best illustrate the variables in each.

1) THE REALLOCATION OF ACADEMIC TIME AND CONTENT. A major concern of the school/college programs we examined was the use of time allocated for learning between the 9th grade and the attainment of a postsecondary credential--Associate's or Bachelor's degree. By custom (and sometimes, by law), we set expectations that students will spend 4 years in secondary school, take an additional 2 years to the Associate's degree or an additional 4 years to the Bachelor's degree. Progress to these milestones is usually measured by credits, the proxy units for time.

But many of these school/college programs evidence a counter-tradition based on the assumption that students should be able to move through the continuum of education at their own pace and by virtue of demonstrable achievement, not by the dictates of an actuarial time-table. This counter-tradition was born of consideration for the needs of more gifted students, and has been manifest for a quarter-century in the Advanced Placement program, the International Baccalaureate, and similar programs which shorten the time to postsecondary credentials without measurably increasing the amount of learning, or content. As postsecondary education has become so much more expensive in recent years, there is a significant motivation for students to enter into one or more of the structures we have created for time-shorted degrees-- all of which provide the opportunity to earn college credit or credit-equivalence while in high school.

A complementary strategy also turned up in our materials, namely, that which aims to increase the amount of student learning within the customary allocation of time. Credits are nice--but not necessary--this strategy implies; and besides, we know that a majority of our college students now take more than 4 years to complete the B.A. (and more than 2 to complete the A.A.). So why rush it? Take your time! Learn more or learn it better!

Both strategies are designed to enrich one or more aspects of the education of college-bound students, i.e. there is little doubt but that the vast majority of secondary school students who elect these programs will matriculate in a college or community college. Thus considerable energy is devoted to a preview of the nature of postsecondary academic work, and, in many cases, the atmosphere of a college.

There is no order to the following abstracts other than that the first three describe wholly self-contained programs.

1. Matteo Ricci College (Seattle, Wash.)

A noted experiment in the Time Condensed Baccalaureate that moves students from grade 9 to a grade 14 B.A. It is conducted as a college-within (or enclave) at Seattle Preparatory School (for grades 9-11) and Seattle University (for grades 12-14), and has operated since the fall of 1975.

The program addresses "the costly and stifling repetition" in the academic content of high school and lower division college courses, the lack of integration in the educational process at the secondary and postsecondary levels, the fragmentation of students' lives and the loss of moral values in education.

The program is dominated by 3-year integrated courses in composition, aesthetic development, unified science, foreign language, mathematics, cultural studies, religious development, humanistic inquiry, and psycho-physical development.

Program impact is measured by the ACT COMP (Comprehensive Outcomes Measurement Project) examination and by comparing ACT scores with control groups (local and national). Results show Matteo Ricci students performing at comparable or higher levels.

111 students have graduated to date, with roughly two-thirds continuing on for further study. Approximately 725 students of very diverse backgrounds are currently enrolled, of whom approximately 40% received financial assistance toward tuition.

2. Simon's Rock of Bard College (Great Barrington, Mass.)

Simon's Rock was established in 1974 in the model of the Hutchins college at the University of Chicago in the 1930s--namely, as a two or four year collegiate "bridge" commencing in the 10th or 11th grade and concluding with either the A.A. and transfer in Grade 12 or with the B.A. in Grade 14.

But it would be a mistake to think of the "Early College" of Simon's Rock as simply a time-shortened degree strategy. Rather, it is a thoughtful institutional recognition that states of cognitive, social and moral development are not strictly correlated with age. The program is not intended for the extraordinarily gifted student, rather for the type of student who is difficult to describe accurately in traditional terms: of above average academic aptitude and high school achievement, but also possessing a degree of maturity and intuitive preparation for the radically different teaching and learning styles expected in higher education.

The academic program consists of a comparatively structured lower division General Education curriculum leading to the A.A. (a curriculum which appears particularly strong and a potential model for community

colleges) and one of seven (7) interdisciplinary majors in the upper years, leading to the B.A.

But personal development is equally emphasized in an informal curriculum grounded in the theories of Perry, Kohlberg, Loevinger, Piaget and others, and a great sensitivity to the tumult of late adolescence. Faculty and staff must play multiple roles in this setting.

Longitudinal and comparative studies of graduates demonstrate significant value-added in developmental (cognitive, moral, aesthetic) terms. The academic records of transfer students are strong, and 30% of the B.A. graduates go directly into graduate school.

3. Clarkson College of Technology (Potsdam, N.Y.)

In the late 19th and early 20th centuries, a number of American colleges operated residential preparatory schools on their campuses. The Clarkson School and its "Bridging Year Program" is reminiscent of that phenomenon. The program is expressly designed for talented high school seniors with demonstrated interests and ability in science, engineering and related fields. The program brings 20-30 students to the Clarkson campus for a residential year during which they take a full schedule of freshman courses with college students. They live in four group houses adjacent to the campus but separate from other student housing.

The program thus provides a necessary balance between interaction with and separation from traditional college students. Like Simon's Rock, Clarkson believes that talented students with adequate social maturity profit from an early start on college, but that such students also need a supportive living environment and careful monitoring of progress.

Part of the educational process for budding engineers and scientists should include attention to co-curricular areas of personal development, and the Clarkson program requires students to set goals and earn "self-development units" in human relations and communications skills, physical conditioning, awareness of the arts and awareness of the place of professionals in society.

In May of 1982, a full assessment was made of student progress since the initiation of the program in 1978. Only two students (1.7%) had ever left the program (in comparison to a 10-15% attrition rate for Clarkson freshmen). Of all students who had been involved in the program, 96.6% either were enrolled in college or had graduated (30% from institutions other than Clarkson itself). Academic performance of Bridging Year alumni also exceeded what would be expected for Clarkson College students, and those program alumni at other colleges were achieving above the mean for their classes as well. (ER)

4. Syracuse University, et. al.

Generally regarded as the most successful and highly replicated model of college course-taking by high school seniors, Project Advance serves 75 high schools and 4100 students in four states. In existence since 1973, the program was designed to address both the curricular redundancy

between upper level high school courses and lower level college courses and the lack of challenge in the senior high school year for college bound students. Syracuse considered a variety of options to address this problem (early graduation, Advanced Placement, college courses taught in high schools by college faculty, and "split-day" programs) before arriving at the strategy of training and deputizing high school teachers to offer credit-bearing college courses as part of the regular academic program of the high schools.

The profile presented to the Commission is an extraordinarily rich portrait, particularly with respect to data on the impact of this program on students, based on studies of students graduating from the program in 1975 and 1977, e.g.:

- o 98% of the graduates attended college;
- o Of the college attendees, 99% completed or expected to complete degrees (2½ times the national average);
- o Only 12% took time-shortened degrees (a significant figure, since folk wisdom assumes a much higher percentage);
- o 88% achieved a GPA of 3.0 or better;
- o 56% were either attending or planned to attend graduate or professional school.

The key to the Project Advance model lies in the careful selection and summer training of high school teachers for appointment as college adjunct faculty. Curricular outlines and materials (including manuals, tests and assessments, and record-keeping instruments) are prepared and courses offered in English, biology, calculus, chemistry, psychology, and sociology. The courses are carefully monitored by University faculty and Project staff (who visit each class, and check student papers and examinations) to ensure that standards are identical to those in the same courses as offered at Syracuse. The cost to the student is $28 per credit (with a limited amount of scholarship aid available to the financially needy), with the participating high schools bearing costs for training workshops, released time for in-service seminars, and materials.

What struck us as most remarkable about Project Advance was the impact of the program on <u>both</u> secondary and postsecondary <u>curriculum</u>. While the evidence is a bit soft, some participating high schools have "geared up" their 9-11th grade curricula so that all college bound students could be ready for the demands of Project courses. At the same time--and even though this program is <u>not</u> a recruiting device for Syracuse--some departments at the University have made adjustments in course content and structure as a result of changes at the secondary level. Given such benefits of a cooperative relationship within a geographic region, the model is eminently transportable, though it takes a lot of sweat to realize.

5. <u>University School, et. al.</u> (Chagrin Falls, Ohio)

Six northern Ohio independent schools offer various Kenyon College freshman courses for credit, and try to imitate (as closely as possible)

a college environment and the atmosphere and demands of college level work.

As in the case of the Project Advance model, Kenyon selects the teachers in the schools and develops materials and methods with them. But Kenyon also selects the students. Tuition is $70/course, and eleven courses are taught, including American History, American Economic History, French, Latin, English, Physics, Philosophy, Political Science, Statistics, and Studio Art.

The program is in its third year, and information on student impact is limited. A follow-up self report survey is sent to students in their freshman college year. Approximately half of those responding received college credit, but a far higher percentage noted the value of the program as preparation for collegiate demands irrespective of the credit issue.

6. Clackamas Community College (Oregon)

Yet another variation on Project Advance (though evidently, not a conscious imitation), the Alternate College Credit Plan at Clackamas Community College has been in operation since 1977 and has served over 200 high school students in 1981-2 alone. High school juniors and seniors must be recommended. The individual high school proposes the courses (including syllabi, objectives, and final examination) to the college, which reviews and approves them for college credit. The high school teacher is not designated as an adjunct faculty member, but approves student applications for college credit at the conclusion of the course. This approval, however, is subject to final review by an evaluation specialist at the college. There is thus a quality control system in place.

7. University of Pittsburgh

Modelled on Project Advance, the "College in High School" program currently involves 300 students in calculus and computer science courses in 25 high schools. It addresses the psychology of planning for the transition to postsecondary education while students are still in the familiar and reinforcing high school setting. The program also seeks to address the realities of college course and studying demands. A modest tuition ($60/course) is charged.

8. C.W. Post Center/Long Island University

The FAST Program (Freshman Advanced Study for Talented High School Students) was inaugurated in 1972 as a joint undertaking of the C.W.Post Center and Chaminade High School, a Catholic secondary school with a highly selective admissions policy. The founders of the program examined virtually the same set of options that were considered by Project Advance: early admissions and Advanced Placement being the most accessible; but selected a strategy that brings college faculty to the high school to teach college level courses.

These courses replace the senior year curriculum for participating students, who are considered to be fully matriculated at C.W. Post --where the tuition is less than at the parochial school (besides, Post returns a third of the receipts to the high school for overhead and facilities). Approximately 60 students participate each year; and the experience of the program to date is that 90% of the credits earned are accepted in transfer. While many FAST alumni accelerate their college work and condense the time to the baccalaureate degree, others use the experience for purposes of enrichment and consider it a preparation for the demands of highly competitive colleges.

9. University of Iowa

The Secondary Student Training Program at the University of Iowa is an "early admissions" summer project that has focused on gifted high school students with interests in science and mathematics since 1960. Some 400 students attend annually.

The program employs Renzulli's Enrichment Triad Model for gifted students, emphasizing general exploration, group training in skills and processes, and individual investigations in traditional classroom courses (e.g. Molecular and Cellular Biology), field-based courses (e.g. a Yellowstone Ecology Program), and research practicums in which students are placed in supervised positions in research laboratories. These enrichment and acceleration experiences are typically unavailable to secondary school students.

But what distinguishes this approach to "summer school" for the gifted is that college credit is awarded to qualifying students as early as the summer between the 10th and 11th grade. Follow up studies of those students who matriculate at the University of Iowa (about half of the program participants) indicate much higher academic performance than the mean for entering freshmen, but there is no way to determine how much--if anything-- the program contributed to that difference.

Perhaps what is more significant, though, is that the curricula for this program are developed by teams of secondary school teachers, undergraduate teacher education majors, and college faculty from the scientific disciplines, a process that provides for extraordinarily close working relationships between the University and local school districts as well as a unique training opportunity for future teachers.

10. Appalachian State University (Boone, N.C.)

The Admissions Partnership Program at Appalachian State addresses a perceived redundancy in high school/college work by allowing high school seniors to earn up to 26 general education credits, filling senior year elective slots with college courses offered at the high schools. For admission, high school juniors must present three (3) years of English and two (2) years of mathematics. The Saturday courses are taught by high school faculty with university assistance, supervision, and approval. While the program has operated since 1973, the information presented to the Commission did not include evidence of impact on student achievement.

11. Staten Island Continuum of Education (New York)

The City University of New York, three colleges, and 100 schools on Staten Island have been operating the Bridge Program through a consortium since 1974. It seeks to smooth the transition between levels of schooling and college by creating a number of programs to allow a flow of teachers and students among cooperating institutions.

Approximately 1,000 high school students attend college, taking from three to eight credit hours per semester as a regular part of the school day. An additional 2,000 students take part in non-credit courses, and an additional 1,000 economically or academically disadvantaged students receive special counseling to increase their motivation.

Data on 6,000 students (half of whom are classified as average or disadvantaged) indicate that 83% subsequently attend college, and that students perceive that the program was valuable for learning to manage study time, develop study habits, and to clarify courses of study and careers.

12. Henderson County Junior College (Athens, Texas)

In this Concurrent Enrollment program, high school seniors take college courses in English and history during the regular school day, with the awarding of credit deferred until the student graduates. Planned with superintendents, principals and high school counselors, and directed at students in the top 1/3rd of their high school classes, the program has been in existence since 1979. A course will be organized at a local high school only if 18 students enroll. Faculty are provided by the community college, not by the high schools, and find that they have to deal with such "novel" problems as absenteeism, student discipline, and dress codes (for themselves as faculty). But one might expect community college faculty to be very enthusiastic about such a program (and they are), in part because they have found a goodly percentage of the high school students to be superior to their own. The community college, too, seems able to identify, prepare and recruit capable students to its programs who might not have attended in the past. Approximately 25% of the 400 students who have participated in the program have subsequently enrolled at Henderson.

13 and 14. University of Iowa

The reallocation and enrichment of academic content at the secondary school level in preparation for higher education can also involve the performing arts. Although we usually do not think of the arts at all in this context, it should be obvious that one of the areas that gifted and talented youth tend to come to our attention is precisely here, and the University of Iowa operates two notable programs directed at such students.

The first, a summer theatre ensemble, has been in existence for decades. Some 15 students are selected each year through a rigorous screening process; and over the past 10 years, 100% of the participants have gone on to college and 25% to successful careers in some aspect of theatre

arts. The program itself places a great deal of responsibility on the students, and serves a public service function in that performances are offered for special populations (in hospitals, nursing homes, schools for the handicapped, date care centers, and prisons).

Within the past few years, the University has also developed a Gifted and Talented program in dance to provide quality pre-collegiate training and performing opportunities, particularly for teenagers with 5-7 years of previous training and from school systems which lack both qualified personnel and provisions for programming in dance. Approximately 40 students per year participate (considering, for example, that 1 out of 6 Iowa City School District students are enrolled in private dance studios, the impact may be small but significant).

What is particularly interesting about the dance program is an extraordinary awareness of the cognitive and social skills necessary for dance which are also applicable to college-level academic work and life, and which are thoroughly tested as part of the audition process. These include auditory language skills, visual-spatial relationships, memory and self-concept. A number of hypotheses concerning the relationship between these factors and learning have been built into what promises to be a most enlightened research component of this program.

15. University of South Florida

Since 1979, the Univ. of South Florida has operated a series of programs for gifted junior and senior high school students. In one, the University cooperates with two area school systems to sponsor summer programs for gifted students in mathematics. The school districts select the students and pay for the program (with some private industry support and state funds).

This program seeks to challenge gifted students through an introduction to concepts, computational and numerical methods of problem solving not available in the school curriculum, and to help them develop a sense of discovery and applied problem-solving skills using the computer. Curriculum and course content are carefully developed to complement school coursework and stimulate further study. Student achievement during the program is remarkable: post-test scores increase by over 100%.

USF sponsors a similar summer program for the same constituency but emphasizing biological and medical science. The students, selected by the Hillsborough County Program for Gifted Students, participate in a four-week program on the Tampa campus of USF and at the adjacent Veterans Administration Hospital. Lectures, demonstrations and laboratory experiences in electron miscroscopy, microbiology, vision physiology, cardiology, hemodialysis, radiology and nuclear medicine are given by university and College of Medicine faculty, graduate students and hospital staff.

Student achievement in this second program is measured by pre- and post-tests in biology and microbial genetic engineering. In 1982, the

average scores on the former increased from 59.8 to 85.6 and on the latter, from 28.04 to 91.46.

As an outgrowth of these summer programs, the Academic Laboratory Experience was created. Each semester, a small group of students come to USF after school to work on special projects in science and math. Faculty members work on a one-to-one basis in suggesting projects of interest, most of which involve uses of the computer. Many of the students in this program have become early enrollees in the university, and all have entered college. (ER)

16. Michigan Technological University

The Women in Engineering Program (WIE) was initiated in 1973 to address the problem of low enrollments of women in technically-related fields. WIE was thus designed to develop awareness of engineering careers in secondary school women with high academic potential. The program is supported by corporate donations and offered to students without cost.

WIE is a summer program involving one-week workshops for approximately 100 students per session. Over 2700 young women and 110 teachers and counselors from high schools in 15 states have attended over the past 10 years.

The workshop introduces the students to the major areas of engineering and technology, and includes lectures by women engineers. Following presentations on a specific area, students have the opportunity to perform laboratory exercises typical of work in that field. They are also provided with information on cooperative education, admissions standards, financial aid, and opportunities in the military.

A follow-up study of participants in WIE from 1973-1979 indicated that 60% of the college enrollees chose engineering as a career. Indeed, since the inception of the program, enrollment of women at Michigan Tech itself has risen from 17% to 23%; and most of these students major in engineering or science-related fields. (ER)

17. Clemson University

The Careers Workshop Program at Clemson is designed to attract bright minority students to the study of engineering. In this respect, it is analogous to the program at Michigan Tech; but the intervention here occurs between the sophomore and junior year of high school, at which time it is still possible to influence academic program choice in the critical years prior to admission.

First offered in 1976, this short-term summer program selects (through review of high school transcripts, recommendations and tests) approximately 60 black students from the Carolinas and Georgia for a progressively more demanding experience. That is, in the first summer, the students will come to Clemson in groups of 30 for two weeks, during which they will be introduced to engineering through very creative and engaging problems and projects (e.g. design and construction of a model bridge or a "survival module for the nuclear age"), beginning computer

programming, and a cross-disciplinary course in "interpersonal relationships." In the second summer (between the student's junior and senior year of high school), the program runs for four weeks, and stresses academic mathematics, science (usually Chemistry), English composition, more advanced computer programming (Fortran, replacing Basic) and a specific field of engineering.

Career and college admissions counseling intensifies in this second year. In the words of the profile, the counselors are "unashamedly" recruiters for Clemson, but more concerned that the students attend college and strongly consider majoring in engineering. Of the first 60 students to pass through the program, 52 had matriculated and 39 were studying engineering (23 entered Clemson, of whom 19 were majoring in engineering). In 1981, and perhaps as a result of such success, the University more than doubled the size of the program, and expanded its disciplinary and career parameters. Since that time, too, the program has achieved year-round status, enabling staff to provide continuing advice and support to program alumni at Clemson.

While this sequential, follow-through approach to motivating bright minority students is notable in its own right, the secondary benefits for Clemson's standing in the black community in South Carolina have been substantial. On this issue, along with others concerning the impact of changing economic conditions on student choice and recruitment efforts, the document submitted to the Commission is very enlightened.

18. Academy of the Sacred Heart (Chicago)

The "Final Project" program at the Academy of the Sacred Heart was founded on the assumption that postsecondary experiences--college and work--demand sustained and systematic investigations for which most high school students are unprepared. It also implicitly recognizes that student achievement is likely to increase with proprietary interest, i.e. the sense that one's education can be owned and is not some externally imposed trench that one is required to struggle through.

Students develop proposals for senior year independent study projects and submit them for approval to a committee consisting of school faculty, students, and a trustee and/or parent volunteer. Projects can be carried out during the summer or school year as long as they do not interfere with the regular course of study. Of particular interest in the proposal itself is the fact that the student is asked to identify the skills, capacities, and understandings necessary to undertake the project and complete it successfully--a way of bringing about self-reflection on the nature and processes of education that we assume to be one of the principal goals of higher education. For this reason, the absence of any indication of impact on students is disappointing.

19. Orange High School (Pepper Pike, Ohio)

Like that at the Academy of the Sacred Heart in Chicago (see above) the Senior Project program at Orange High School addresses the problem of

preparing students for the transition from secondary education to either college or work. While nominally an independent study project designed to infuse the senior year of high school with greater meaning for students, it allows for a range or work and service projects that in other contexts would be analogous to cooperative education--except that in this case, no remuneration is allowed. A one month period at the end of the Senior Year is set aside for pursuit of these projects, in which students must engage themselves for a minimum of 6 hours a day. Students design their projects and submit them to a review board consisting of teachers, students, and parents. Each project requires both a faculty advisor and a community sponsor.

Other Programs in This Category:

The Commission also received profiles and other communications from a variety of college programs that sought to enrich content and/or reallocate academic time for secondary school students. But the materials submitted in these cases either were not substantial enough to analyze or described programs implemented so recently that results were not yet apparent.

King College (Bristol, Tenn.)

A summer program for high school juniors with SATs of 1000 and GPAs of 3.0 or above, the King Fellow Program has been in existence since 1971. The curriculum parallels that of the freshman subjects at King, including New Testament Survey, BASIC Computer Programming, General Biology, etc., and college credit is awarded. It was difficult to determine from the profile how many students participate and what the impact of the program has been beyond the development of friendships.

East Carolina University (Greenville, N.C.)

The Department of Science Education conducts a summer residential science camp for gifted and talented students who have completed grades 7-10. The University also operates a cooperative program for the improvement of science education in area schools. The pooling of resources through this co-op strategy makes it possible for participating schools to stretch their budgets and simultaneously provide an enriched science program.

Beloit College (Wisconsin)

The Porter Scholars Program at Beloit Memorial High School is one of many local relationships involving college courses on the college campus for academically talented high school seniors, and in a "split-day" framework. A bequest covers tuition for one course; students pay for anything beyond that.

Hawthorne High School (New Jersey)

Under the generic title of "articulation program" are a diffuse set of activities involving Hawthorne High School and the neighboring William Paterson College of New Jersey. The high school uses the college as a resource in providing classroom speakers and consultants, in offering Saturday college courses for high school students, and in making available library and laboratory facilities to high school students and classes.

New York City Technical College

High school junior applicants to the Department of Graphic Arts and Advertising Technology are granted part-time matriculation status in their senior year and attend classes with a tuition waver. The program thus allows students to complete high school graduation requirements while exploring career and academic programs in graphic communications. A comparatively new program, it is difficult to determine impact on students.

University of Tennessee at Knoxville

An Engineering Scholarship Program for minority students who rank in the upper quartile of their high school classes and score above national means on ACT exams has been in existence since 1973. Recruitment efforts are considerable, and an orientation week includes parental participation. A co-op placement is at the core of the postsecondary portion of the program and a pre-co-op summer program is designed to orient students to the nature of technical work. Over 400 students have participated, with a retention rate (at UTK or elsewhere) of 70% (though that rate has been rising in recent years).

SUNY at Geneseo

We were tempted to review this program in Volume II, under Part P ("Assessment"), since it is a three-year baccalaureate based on the student's placing out of up to 30 credits of General Education requirements by examination. The examinations used (the Undergraduate Assessment battery from ETS) are more demanding than those of the College Level Examination Program (CLEP). But we could not determine how the examinations were chosen vis-a-vis the contents (disciplinary and generic) of the courses the student would otherwise take. At the same time, the document did not argue convincingly for this approach as a substantive alternative to a more challenging General Education program.

2) THE RAISING OF EXPECTATIONS: OUTREACH AND RECRUITMENT. Programs in this category recognize that access to higher education is neither a dulling slogan nor a passive policy, and that there are students of great potential and poor preparation who need special programs to move them into successful postsecondary careers. Some of these programs also address students whose ignorance of what postsecondary education can do for them is great, and whose motivation to continue their education (or

21. Univ. of Wisconsin-Parkside

Project CHAMP is directed specifically at underprepared minority high school students, and is designed to increase motivation, to encourage them to take more challenging courses in high school, to strive for appropriate career goals, and to encourage postsecondary study.

Project CHAMP (Creating Higher Aspirations and Motivations Program) evolved from a collegiate skills program at UW/Parkside that was designed to assist students meet a requirement (instituted in 1977) of passing competency tests in reading, writing, mathematics, library skills and research skills prior to the completion of 45 college credits. It involves workshops for high school students ranging in length from two days to six weeks (summer), with college personnel following up by talking with students, parents, and high school counselors concerning students' course selections and academic progress. The summer program provides students with an introduction to courses in which they would be enrolled in the fall semester, hence an advanced orientation to the material. There is an exclusive emphasis on academic subjects, with particular attention to mathematics, English, and science. A variety of allied motivational strategies are employed, including vocational interest inventories, career seminars, and regular telephone conversations with students, parents, and high school personnel.

The program has been operating since 1979, and hence no evidence of long-term impact on student achievement is available. However, early follow-up data suggests that students who have been through the program are more likely to select more demanding academic courses in high school and are accepted in significant numbers in the pre-engineering summer programs of the University of Wisconsin at Madison.

22. La Guardia Community College (New York City)

The Middle College High School at La Guardia Community College is a notable instance of an urban college taking some high risks with higher risk high school students and succeeding within a framework of objectives that are both modest and significant.

Since 1974, the Middle College has been an enclave within La Guardia Community College for 10th-12th grade students identified by high school guidance counselors as potential drop-outs from the system. These students, who exhibit both academic and social instability and poor self-image, are interviewed and admitted to this alternate program by current students.

The concept of the enclave of a high school program on a college campus is not new to American education, but a variety of features of this program are particularly notable. The program stresses personal and career development as a mode of bringing alienated students back into the system, and uses an internship in a community services project (a modified cooperative education model) for one quarter each year. The delivery of the academic program has been designed around this internship and that has necessitated some restructuring of curriculum (content and objectives of individual courses). For each of the 450 students in the program, the connections between the internship, the

academic program, and the college environment are cemented by a faculty supervisor.

While many students in the program earn college credit (and thus shorten the time to the high school diploma or the A.A. degree), that issue is secondary to the development of a sense of the continuum of education and a commitment to learning.

Whereas the expected drop-out rate for this group of students is 40-50%, not only has the actual rate been but 15%, but 85% of the 254 graduates to date have gone on to college.

23. The City College of New York

The Select Program in Science and Engineering at CCNY is a classic high school outreach program directed at involving more minorities in science and engineering, and is perhaps one of the most successful of its kind. It brings 10th grade students (30 from each of 16 New York City high schools) to campus for 12 full-day Saturday programs of mathematics, laboratory, career lectures, and counseling. The students are then kept together in their high schools for math and science courses in the 11th and 12th grades, and are brought back to campus periodically for conferences, laboratory presentations, etc.

Of the first group of 175 students who completed the program and graduated from high school, 74 entered college in science and engineering fields. Of this group, 30 completed calculus in high school.

Although the bureaucratic gauntlet required for such a program is unique to big city school systems, the model is transferrable to non-urban universities with distinctly bounded service districts, and obviously can be directed at majority students as well.

24. The William Paterson College of New Jersey

Two significant departures from traditional models of encouraging disadvantaged (and principally minority) students to enter the professions combine to distinguish the Pre-Professional Outreach Program:

- o the students (16-20 annually) spend their entire senior year of high school in a program conducted on both the campus of the college and in professional institutions, e.g. the New Jersey College of Medicine and Dentistry;
- o their home high school awards both credit and diploma while college faculty and others conduct the instruction and the evaluation.

The idea is to change the motivational environment (without college credit being an issue), to keep the collegiate-type experience free of tuition, to prepare the student for the rigorous undergraduate curricula required for admission to graduate or professional school, and yet to allow the student to maintain important social ties to his/her high

school. The particular administrative and credentialling arrangement requires a special designation from the State Department of Education.

The academic program begins in the summer between the junior and senior years of high school, and emphasizes basic skills, courses that provide a foundation for work in either sciences/health professions or business/management, and courses required for the completion of the high school diploma (e.g. American History II, Physical Education). Most importantly, the students spend one day a week in a combination academic and career exploration curriculum at a professional institution (hospital, medical school, brokerage house, etc.) that is intended to demonstrate that education is a continuum that never ends.

The impact of the program on otherwise high-risk students is hard to judge. All that is known to date is that roughly two-thirds of the participants since 1977 have entered college and that approximately half of those continue to pursue pre-professional courses of study. Given the limited objectives of the program, such statistics are encouraging.

25. Jefferson Community College (Kentucky)

The Recruitment/Retention Project is a four phase model departing from the norm of supportive services by directing its attention wholly on classroom instruction, and operating in both pre- and post-matriculation periods. This makes retention more of a faculty responsibility than a student service responsibility.

An open admissions institution suffering from a combination of enrollment decline and attrition (40%), Jefferson Community College faculty designed an approach directed at improving advisement in the pre-enrollment and enrollment phases of transition and improving class attendance and time-on-task in the post-matriculation phases. While it is difficult to tell precisely what they do from the profile submitted, the data indicate success in improved college completion and retention rates.

26. Muskegon Community College (Michigan)

The Pre-Admission project seeks to anticipate the problem of postsecondary retention through pre-admissions orientation to the nature and demands of college. It thus addresses the kinds of serious misconceptions that high school students have about college and which often result in disillusionment and attrition.

High school counselors select a small number of students for a class that is conducted by college staff at area high schools. While it is unclear from the document how often this class meets, the course covers such topics as the relationship between academic programs and careers and financial aid, and seeks to develop the student's self-concept. In conjunction with these ends, the College provides a battery of diagnostic examinations to assist students in assessing their abilities.

For students who enter Muskegon Community College itself, this experience has proven value because it provides them with a link to college staff when they arrive. Given the generally recognized traumas associated with the transition to postsecondary education, it is not surprising to find that that link resulted in a 92% retention rate (versus 40% for the institution as a whole) for those students who had taken the program. For students who enter other colleges, the retention rate is 75%, a figure still well above the national average.

27. Edinboro State College (Pennsylvania)

Marginal students, especially those whose applications for admission to college are rejected, usually lose confidence in their ability to learn and avoid participating in learning situations that associated with failure. Edinboro State has sought to rescue such students by offering them a second chance to prove themselves through direct demonstration in two college courses. If the students pass a basic writing course and a developmental reading course, they are admitted to the General Studies Program of the College (evidently, a kind of transitional program in itself).

This intriguing notion of "trial admissions," while not new, is informed in this case by a sensitivity to the kinds of students that formula admissions policies tend to overlook yet who may have the capacity to achieve success in college. While the program is comparatively young, it can demonstrate that, compared to a control group of regularly admitted freshmen with similar characteristics, students in the Trial Admissions Program showed a far higher rate of retention and significantly higher grade point averages.

28. Xavier University of Louisiana

Project SOAR (Stress on Analytical Reasoning) is a pre-matriculation summer program that seeks to enhance the problem-solving abilities of students who indicate an interest in mathematics, sciences, or the health professions. Based on Piagetian theory, the core of this academic program consists of 25 three-hour laboratory experiments (five each from Biology, Chemistry, Computer Science, Mathematics, and Physics) that stress five of the major components of problem-solving:

- o control of variables;
- o proportional reasoning;
- o probabilistic reasoning;
- o combinatorial reasoning; and
- o recognizing correlations.

Each laboratory is organized in a learning cycle format with exploration, invention, and application phases.

In addition, students engage in a series of activities designed to improve vocabulary, note-taking ability, and ability to visualize in three dimensions (a visual literacy skill required for college level work that is often overlooked).

The program has been in operation since 1977, carries no academic credit, but is available, at no cost for tuition, to all science students accepted at the university (in 1979, the latest year for which data is available, 113 students attended). Benefits to both students and the university are considerable, e.g. the graduation rate of science majors who have been through SOAR is double that for those who have not; pre- and post-tests of formal reasoning show considerable value-added; science enrollments have more than doubled; and placements in graduate science program and medical/dental schools have risen dramatically.

29. University of Illinois at Chicago

The "Early Outreach" program seeks to increase the number of Blacks and Hispanics who will gain access to health professions curricula through regular admissions procedures without extensive remediation. Its long-term strategy is to prepare a gifted pool of economically disadvantaged minority applicants for entry into health professions schools. By providing curriculum enrichment and career guidance starting in the middle school years (grades 6-8), the program seeks to stimulate high school completion, college attendance and a career in the health professions. This "talent ladder plan" reflects the recommendation of the American Association of Medical Colleges that medical schools extend their outreach responsibilities.

Early Outreach programs at the Health Sciences Center of the University involve faculty and tutors, school personnel, parents, health professionals and agency personnel with students who are selected by both academic and non-academic criteria. One of the more unusual of the latter is a constellation of variables called "family support," formulated in the recognition that family commitment is particularly critical to the long preparation period required for careers in the health professions.

The programs involve a Saturday College for 7th and 8th graders, a Career Awareness in the Health Professions program for 10th graders, and a Biomedical Science Program which starts students in the 9th grade. Program evaluation is conducted by an Office of Evaluation Research in the College of Education, and involves a more sophisticated design than is common in many similar programs. Students in Early Outreach have made greater academic gains than those in control groups, and are able to define their career goals more realistically. Secondary benefits have accrued to the University in the sensitizing of faculty to the talents of this disadvantaged population and in the enhanced stature of the University within its urban community. (ER)

30. St. Edwards' University (Austin, Tex.)

The Migrant Attrition Prevention Program is a rather unique undertaking of a college in relation to a very distinctive population (and its attendant educational problems). Children of migrant laborers--as one can well imagine--receive a very inconsistent and eclectic education, often carry around partial transcripts from a dozen high schools, evidence a high drop-out rate, and are at a severe disadvantage in terms of access to higher education.

The program brings over 200 of these students to the St. Edwards campus each summer. For students completing the 9th grade, the summer program is an academic one, focusing on basic skills and supplemented by tutoring and counseling. For students completing the 11th and 12th grades, the program involves both study and part-time jobs.

Since 1975, over 1,600 secondary school students (principally Hispanic) have participated, and over 90% of them have either graduated from high school or are still enrolled in school (a remarkable percentage in light of the normal attrition rate). Approximately 30 Texas school districts participate in the program (presumably recruiting and recommending students), which, given its obvious expense, is supported by Federal, state, and private (corporate and foundation) grants.

31. City University of New York

The Central Office of CUNY presented the Commission with summaries of 127 distinct "articulation programs" involving 19 units of the City University and literally dozens of public high schools, private and parochial schools, community school districts, and day care centers throughout New York City. Approximately one-third of these programs address the transition from secondary to postsecondary education, and a number of these submitted individual profiles which are accounted for elsewhere in this document.

Of those programs that fall within our areas of interest, 22 offer college credit for high school students and 24 others address basic skills, curriculum and career awareness in mathematics and science. While the summary report on this collection is helpful in understanding the potential range of efforts involving a university system with schools, it is difficult to determine much concerning program operations, history, or impact. Follow-up for details concerning some of the seemingly more unusual efforts would be useful.

Other Programs in this Category:

The Commission also received profiles and other communications from a variety of programs that sought to insure adequate preparation and access to postsecondary institutions for disadvantaged students. Again, the materials submitted in these cases either were not substantial enough to analyze or described programs implemented so recently that results were not yet apparent.

Univ. of Calif. at Los Angeles

The "Academic Interinstitutional Programs" at UCLA are directed at the overall problem of underpreparedness, and all involve cooperative relationships with community colleges and high schools. The oldest of these programs was initiated in 1980, and the primary beneficiaries of most of them are elementary, secondary and community college teachers, not students. One advantage of this approach is that in building working relationships and model curricula with local school personnel, one can hope for greater

standardization of content and hence lesser disparity in the preparation of students.

Long Island University (Brooklyn, N.Y.)

The "Pre-College Evaluation and Training Program" is an unusual pre-matriculation program directed at disabled and handicapped students. A college credit-bearing course is designed to present such students with the opportunity for both self-evaluation and the acquisition and development of study skills, note-taking abilities, and other college-level academic capacities. Evaluations are prepared in consultation with instructors and peer counselors. No indication of overall program effectiveness has been indicated.

Univ. of Oklahoma at Oklahoma City

The "Biomedical Professions Program for High School Students" has been in existence for three years, and requires students to transfer to what appears to be a magnet-school-within-a-high-school in Oklahoma City. Beyond recommendations from guidance counselors and science teachers, there was no indication of how students are selected.

The students can follow one of four curricula from the 9th to 12th grade: Life Science (which, oddly, does not include Chemistry), Bio-Medical Science, Physical Science or Earth Science. With the exception of Earth Science, all curricula require Advanced Placement courses; with the exception of Bio-Medical Science, all require mathemetics through Trigonometry. But no data was presented as to how many students actually follow these programs.

At the same time, the Health Sciences Center at the University Offers a series of courses in Introduction to Health Careers, Medical Terminology, Medical Ethics, and "Advanced BioMedical Practicums." With the exception of the latter, which consist of two-week modules during which students work with health professionals, the document submitted did not indicate how often, where and precisely to whom these courses are offered.

Pace University (New York)

The Pace Opportunity Program has been in operation for nearly 15 years, and is directed at low-income, disadvantaged students who meet regular University admissions requirements. We know that the program was designed to "recruit, admit and train," and we know that it involves a great deal of supportive services (counseling, academic workshops, tutoring, financial aid, etc.), but we could not tell whether this is a recruitment and post-matriculation retention program or whether it is an outreach program involving the University in the transition from secondary to postsecondary education while the student is still in high school. The anecdotal evidence suggests that students who enter the University through this program and graduate do achieve a modicum of success in worklife and/or further education, and that alumni of the program

offer it considerable support. Exclusive of Federal and state student aid, the annual operating costs of the program are about $370,000; but program details were too thin to judge that investment.

St. Edward's University (Texas)

The IACM (Improving Career Access to the Medical Professions) program is comparatively new, directed at inner city poor youth in Austin, and involves both Saturday and summer interventions including career counseling, college preparatory classes, and internships. The program starts with 11th grade students. No plans were indicated for either the 12th grade or after.

Philadelphia College of Osteopathic Medicine

This is an example of an increasingly common phenomenon: a professional school engaging in early intervention without the assistance of a particular college. While the Minority Opportunities Program is directed principally at college students and recurrent education adults, it operates a parallel project, "Osteopathic Discovery," aimed at high school students. These students spend one high school summer on campus engaged in hands-on hospital work under the supervision of physicians and nurses, and attend demonstrations, lectures, and laboratories. For this they receive a per diem stipend of $18. Assuming they go on to college, students who complete the first summer of the program are invited to return in subsequent summers for "more advanced activities."

3) THE EXCHANGE AND DEVELOPMENT OF ACADEMIC PERSONNEL. These are programs directed principally at secondary school teachers in cooperation with college faculty. But they are not in-service education programs; rather, they seek both to enrich the secondary school curriculum through the elimination of redundancies with postsecondary curricula and to heighten the appreciation of pre-collegiate education on the part of college faculty. Impact on students is a decidedly secondary consequence of these projects, and would be extraordinarily difficult to assess anyway.

32. National Humanities Faculty (Atlanta, Ga.)

The National Humanities Faculty is an independent organization which has developed and maintained a group of 700 distinguished colleges teachers and scholars from around the country who work with school faculty to develop and improve secondary school courses and programs in languages, history, philosophy, the arts, cultural anthropology, and international relations. Their emphasis is on the teaching of the humanities as disciplines, skills, and value systems.

The major departures of NHF's approach are as follows:

- o requests for assistance and identification of subject matter areas and available resources are initiated by the local school district;

- o individual NHF faculty work with teachers in a given school or district on site and in summer institutes over a period of two years, i.e. it is a continuing and reinforcing relationship, not a one-shot affair or single in-service seminar.

Together, these approaches are striking alternatives to traditional in-service teacher education. An elaborate third party evaluation has documented the success of this approach.

33. Illinois Institute of Technology (Chicago)

The College-High School Teachers Interaction Project (CHIP) and the Illinois State Physics Project, which have now joined, may serve as a model of an informal metropolitan network of science teachers (physics teachers in particular). Operating in four high schools and six colleges, the particular combination of these projects is designed to increase the number of high school students taking physics, to enhance the quality of physics teaching generally, and to establish a permanent working relationship between high school and college physics teachers.

The group meets monthly and employs a phenomenological approach to sharing ideas for improving physics instruction. That is, the group actually works through experiments and demonstrations as opposed to listening to dog-and-pony shows. The objective is to find strategies that will arouse student curiosity.

The program has been operating for 11 years without any extrinsic rewards for participants. This longevity speaks eloquently to its success.

34. Herbert Lehman College/CUNY (Bronx, N.Y.)

The Writing Teachers' Consortium is a comparatively new program involving faculty development in 28 New York City high schools over a three year period. Both Lehman College faculty and peer high school faculty engage in on-site training, retreats, and summer seminars designed to realize a writing-across-the-curriculum program in each participating high school and to develop local leadership for that program. The assumptions underlying the program are that student writing can best be improved by improving the teaching of writing and that the best teacher of teachers is another teacher, not a transient consultant.

The program grew out of the realization that the New York City Writing Project (one of 92 sites of the National Writing Project) was not reaching the average classroom teacher and hence was not evidencing sufficient impact on the school system. Only English teachers were being addressed and there was no effort to build, in each school, a cadre of teachers and administrators who could carry on a joint and mutually-reinforcing effort. The document submitted to the Commission is rather elaborate on this background and evidences deep understanding of the organizational barriers to both school/college cooperation and secondary school improvement.

For the 300 teachers involved in the program, the key objective is to internalize the notion that all learning, as a process, is similar to writing. Nonetheless, participating teachers create course syllabi and instructional materials adapted to fit the unique needs, strengths, and weaknesses of particular schools. Ethnographic research on student writing and on teacher/student interaction is constantly being fed into the project.

While the program has been in operation for only a year and its impact is as yet unmeasured, the profile submitted to the Commission is rich enough in its account of that year and its informing principles to suggest great promise for the effort.

35. California Council for the Humanities (San Francisco)

A variation on the concept of the National Humanities Faculty, "Humanists in the Schools" is a program that is designed to link schools, universities, and other local institutions (libraries, museums, theatres, etc.) in a partnership for the enhancement of education. It places university humanities faculty in public school classrooms for long-term residencies designed to strengthen such areas of curriculum as literature, art history, classics, and history.

The initiative lies with the local school district, which applies to the California Council for the Humanities for a grant to employ a university faculty member to work with a teacher team for at least one semester per year. A project is developed, special classroom sessions are conducted by the team, and students are involved in both research and other activities with community cultural and civic organizations. In addition, the visiting university faculty member offers intensive seminars with school teachers.

The program has been in operation for three years in three major school districts. Some ten (10) schools, 100 teachers, 16,000 students, 16,000 parents, and others have participated directly in the resulting activities. While it is difficult to evaluate a program such as this, the extant information concerning its impact on other developments in the three school districts is encouraging.

36. University of Pennsylvania (and 70 others)

The Program in Strengthening the Humanities through Foreign Language and Literature Studies is an analogue of the Illinois State Physics/CHIP project (see #34 above) on a national scale. While comparatively new, it is worth remarking on in these pages because it is informed by a model of professionalization that can be applied to the entire teaching enterprise.

The model is that of the county medical society. As adapted by education, that model allows for the vertical organization of practicing professionals in a discipline from elementary to graduate school. That foreign language education is a comparatively easy field in which to apply the model--because the essence of the subject matter is essentially the same on the elementary, secondary, and postsecondary

levels--should not detract from the broader implications of this approach to organizing and improving a profession.

First piloted in three locations in 1981, the local "collaboratives" (as they are called) provide opportunities for teachers to keep current with scholarly and pedagogical literature through a process of active sharing and to plan improvements (e.g. in second language proficiency testing) in foreign language education at participating schools and colleges in the area. Monthly meetings with panel discussions, demonstration classes and other approaches serve to advance a collective sense of purpose and professional development.

A considerable sum of soft money from various sources has enabled the initial experiment to expand--via competition--to some 70 collaboratives in 36 states involving over 2000 foreign language instructors. The program is coordinated at the University of Pennsylvania, which is encouraging each of the 70 collarboratives both to replicate itself within five years and to stimulate parallel development among English and history instructors.

37. University of California at Irvine

"I Love Science" is not so much a program as a constellation of activities in which college faculty assist elementary and secondary school teachers in (a) updating their knowledge and skills so that science curricula can be more current, and (b) introducing more complex and highly motivating science materials at earlier points in the schooling process.

To these ends, the University offers a science minicourse to elementary school teachers focusing on scientific content and the process of scientific inquiry. The Chemistry sequence, for example, emphasizes the concepts and characteristics of the elements so that they may become more prominent in elementary school science education. In a Saturday "Science Clinic," both presentations on current research and laboratory tours are designed to provide teachers more confidence in their subject matter knowledge.

Lastly, the University and local industry support a 5-week summer program modelled on the now-defunct NSF Summer Science Institutes for secondary school teachers. A "Modern Unified Science" course stressing the teaching of basic physics and chemistry (and including laboratories and examinations) and a "Special Topics" course form the core of this summer program. The latter allows teachers the "excitement" of "peeking in," as one participant put it, on frontier areas of research such as psychobiology.

PART B:

THE FRESHMAN YEAR: THE RITE OF PASSAGE

One of the Commission's most notable moments of testimony was offered by Lois Mazzuca, president of the National Association of College Admissions Counselors, at the public hearing on "College Admissions and the Transition to Postsecondary Education" on June 23, 1982 in Chicago. Comparing our "domesticated rite of passage" with those in other societies, Ms. Mazzuca remarked that

> "Young people nearing the time of career choice or [high school] graduation thrash about with questions they are no more prepared to answer than they are ready to pilot an airplane or practice law. When students come into our offices, they do not know what they do not know--they are asked [by the colleges] to declare a major for a field they know nothing about, choose a school from pictures in brochures, sort through an alphabet maze of acronyms and fill out form after form for a career they probably will not enter five years down the line."

It is no wonder that, as some very wise college students themselves remarked to us the following morning, the greatest challenge for the college freshman of traditional age is the establishment of an academic and personal identity.

How well do colleges understand that challenge? How well do they understand who their entering freshmen really are, what assumptions about education and its "scene" they bring with them, what learning behaviors they have inherited, and what pressures they feel as young adults seeking a path to the future? Our rite of passage is indeed a difficult one, frought with ignorance and uncertainty. In order for colleges to make that first transitional year a productive one, in order for them to establish the kinds of programs that will assist freshmen in adapting to a changed environment and its demands, they have to look at their entering freshmen in three dimensions. While it is difficult to characterize the "typical" entering freshman, the principal author's own research suggested some traits and attitudes we had hoped to see addressed in freshman year programs and which were also implicit in Ms. Mazzuca's testimony:

> 1) Entering freshmen have great difficulty in perceiving any proprietary interest in learning beyond the diploma or major that will render them employable--or so they believe. This lack of a sense of ownership of one's education precludes students from belonging to a community of learners. As high school students, their ideal image of college is often a fantasy of seminars with professors who will love them as intellectual human beings and with whom they will talk about deep subjects and unknown territories. But that image is often exploded on matriculation, when they discover many colleges to be nothing more than large high schools and their "professors" to be graduate assistants who are here one semester and gone the next. The resulting confusion is likely to be reinforced by a Liberal Arts curriculum that, in many institutions, asks for little that is unknown.

2) There is no real break with the adversarial relationship between students and teachers to which entering freshmen have been conditioned over 12 previous years of schooling. Observers of freshman classes testify to a significant amount of gaming behavior in which students either trivialize learning (and hence sabotage the instructor) or develop a set of instructor-oriented expectations based on a knowledge of the instructor's background and style.

3) We have also noticed that entering freshmen tend to assume that the instructor is sole repository of judgment, thus blocking the development of their own skills of self-evaluation. For example, students confuse requests for information with judgments; and will translate any affective statement by an instructor as an order, e.g. "I feel" becomes "you will!" No doubt this behavior is also the result of inherited role expectations.

4) The only reason they speak in class, some college freshmen say, is to impress, not to express; and they equate frequency of participation with influence. Entering freshmen do not believe anyone else will accept the validity of their real interests, so rarely express them. But without natural expression, the goal of a learning community becomes more elusive.

5) We see in too many freshmen a combination of cynicism and passivity reflected in a question that takes one of two forms: "What does it take to get by?" or "How do I get the highest possible grade with the least amount of work?" If college instructors observe this tendency to increase in the second semester of the freshman year, then they should know that this inherited game has already been reinforced by the style of other freshman year courses.

6) Far more seriously in terms of the goals of postsecondary education and the nature of the workplace, entering college freshmen evidence a high degree of discomfort with ambiguity and complexity. This trait precludes productive work in groups (which employers expect of college graduates) because group learning requires those tolerances. Despite their tendency to generalize perceptions, students exhibit an impatience with abstract topics, and rush to lessen their anxiety about learning by translating those topics into recognizable form. These tendencies indicate a low degree of intellectual risk-taking.

With all of that, it should thus not surprise us that freshmen turn to the most easily accesible structure in a college in which to negotiate academic and personal identity for themselves--the major. As Ms. Mazzuca observed in her testimony to the Commission, we place high pressure on our freshmen to specialize on entrance to college; but that pressure proceeds as much from the internal drive for academic identity as it does from the external forces of vocationalism. The unhappy irony, though, is that the early declaration of major isolates students in the security of a program before they have confronted self, the social and

moral roles of education, or options and values in the disciplines. The irony becomes unhappier still when the students in question are under-prepared. Postsecondary learning beyond the major thus becomes an uninspiring rite of passage.

Now, because the issues involved in the transition to postsecondary education are far more complex than what is described above, we did not specifically list them in the material through which we solicited program profiles. As it turned out, however, the Commission received many profiles that addressed "lower division," "General Education," remedial education, and adaptation aspects of the college experience. We have already cited some programs that operate on both sides of the boundary between secondary and postsecondary education; and there are others--serving principally freshmen--which better illustrate such topics on our agenda as the development of study skills or competing forms of General Education in the same institution. Indeed, some of these programs demonstrate very creative solutions to the problems of academic identity suggested above.

But this section treats roughly a dozen programs focused almost exclusively on the freshman year and on problems of adaptation to postsecondary environments and academic demands.

38. University of South Carolina

University 101 is an extraordinarily successful and widely replicated (there are approximately two dozen variations in colleges throughout the U.S. and Canada) approach to the problem of acclimating entering freshmen to the idea of the university and the demands of higher education. The program simultaneously provides special preparation for faculty so as to render them more aware of and sensitive to the learning and development problems of entering freshmen and offers a course that combines institutional orientation, academic materials, communications and listening skills exercises, and problem-solving.

In the process, the program attempts to address some of the debilitating inherited assumptions about education and instructors that we cited in the introduction to this section. Professors become people, not adversaries; and students are brought to an understanding of the university as a organization that helps them function within it to their maximum advantage in terms of both academic and personal growth.

Approximately 1/3rd of the freshman class takes University 101 each year, and special sections are offered to unique populations such as older (over 25) students, undeclared majors, nursing students, Upward Bound students, and handicapped students.

While the approach to the essential material (e.g. study skills, college survival) varies widely from instructor to instructor, the overall objectives do not. Established in 1972 and carefully researched, the program can demonstrate that participation is positively correlated with a significantly higher retention rate, even for those who are initially less well qualified than students who did not take the course.

In what is a particularly intriguing secondary benefit of the program, the University has established a parallel "course" for new faculty and staff.

39. SUNY at Plattsburgh

The research literature on college attrition indicates the necessity for integrating both social and academic aspects of the transition so as to help students find and achieve a productive "fit" between themselves and the collegiate environment. Drawing on the many clues and conclusions offered by the research, and informed by the University 101 efforts at the Univ. of South Carolina (see above), SUNY/Plattsburgh developed an experimental, voluntary freshman seminar designed to help students clarify educational and personal goals, to increase faculty-student contact, to develop both oral and written communications skills, and to increase students' understanding of the nature and purpose of college curriculum.

The document submitted to the Commission provides few details of what is actually done in the seminar. While faculty employed a research design to measure the impact of the course, the results are inconclusive, and perhaps illustrate an old adage that you can't domesticate a tiger by pulling out one claw at a time, i.e. it is a rare phenomenon for one course to change a student.

40. New School for Social Research (New York)

Historically, the New School has served adult populations, so one does not associate it with traditional college freshmen. But since 1972, the New School has operated a special freshman year program consisting exclusively of a series of seminars designed to explore the questions, concepts and methods characteristic of the major academic disciplines.

The "freshman seminar" is not a new concept in American higher education, but the topics of the New School seminars have the ring of upper-division courses (e.g. "The Federalist Papers and Contemporary Politics," "Freud's Concept of the Mind," "Between God and Beast: the Literature of Metamorphosis, "Matter, Energy and Form: the Thermodynamics of Living and Non-Living Systems"). Nonetheless, it is the manner of instruction and disciplined inquiry, not the title, that seems to mark the objectives of this program. There are no lectures and no lowest-common-denominator-surveys. What is more to the point, though, is that the entire freshman year is taken up with these courses.

The material provided to the Commission offered no detail on impact--on students or faculty. But there is no question that the tenor of the program is in keeping with its institutional culture.

41. Illinois Central College, et al

Project COMPAS is a particularly noteworthy cooperative effort of seven (7) community colleges in four (4) states to clarify the roles and expectations of teachers and beginning college students in the classroom. Seven distinct academic programs directed at developing

operational reasoning and the capacity for abstract thought through Piagetian sequences are offered by 40 teachers in six standard content areas: English, history, sociology, mathematics, economics, and physics.

The 200 participating students in 1981-1982 were of average ability. All were specially recruited; but the kind of freshmen sought were not those who are uncomfortable with group learning, ambiguity and complexity, i.e. who did not exhibit the attitudes and behaviors we cited at the outset of this section. Recruiting has proven very difficult, precisely because it is hard to explain the program to "typical" low-intellectual-risk-taking freshmen. Indeed, at one site, where students were placed, not recruited, there was tremendous student suspicion and reluctance to participate. Perhaps that phenomenon argues that the program ought to be extended to the more "typical" freshman. But for that to happen, the sites need to involve more faculty in a risk-taking enterprise of their own.

Since its inception at Illinois Central in 1976, the project has been carefully monitored and evaluated. Student cognitive development has been shown to be positively affected, though the magnitude of change differs by site.

42. Bloomfield College (New Jersey)

Like Project COMPAS, this is a notable freshman year effort inspired by Piagetian theory and directed principally at developing students' analytical reasoning and communication skills. It is a multi-level Freshman Core Program that redefines General Education in terms of cognitive skills. This common goal, persistent focus, and sound theoretical base is important in providing freshmen with a critical sense of the coherence of higher education.

Traditional subject matter is recast in terms of the processes of attention, selection, analysis, modelling, application in problem-solving and communication. The Program admits that the view of intelligence implicit in this approach "is probably too narrow," as it excludes synthetic thinking, for example. But it is probably well limited in terms of a student constituency with a median age of 30, comparatively low scores on SATs, and a past history of unsuccessful attempts at postsecondary education.

The program has been in existence since 1974. It involves a goodly dose of diagnostic intake testing and ability grouping of students within two sets of Core courses in Social Sciences/Humanities and Mathematics/Natural Sciences. Basic skills workshops accompany each course, but they are not optional supplements--they are required until students reach designated levels of proficiency.

The demands on both faculty and students are extraordinarily high, e.g. each course involves 5-7 contact hours per week; the Social Science/Humanities courses require 26 papers per student per semester; and faculty meet weekly to establish common assignments and evaluate course progress.

Success? The measurements vary, but the outcomes are promising. For example, in a remedial math course emphasizing quantitative reasoning, students registered an average gain on standardized tests of three years in one semester v. less than one year for students in parallel courses that did not use the cognitive skills approach. Morale of participating faculty is extraordinarily high and they have become leaders in the improvement of teaching and curriculum across the college. The Program has also had a positive impact on both retention and transfer rates.

43. St. Edward's University (Austin, Tex.)

The particular importance of listening as an information processing skill in higher education has been generally neglected, even though students spend 45% of their academic time in listening. It is clear that part of the process of acclimating freshmen (particularly those weak in language skills) to college should involve training in listening.

The Directed Listening Skills project at St. Edward's is part of a special interdisciplinary General Studies and writing program for freshmen. It is a course operated in conjunction with an existing system of basic skills laboratories and uses a mastery learning model. Students are selected on the basis of scores on diagnostic examinations (which are later used for post-tests). Many of the students in the program are not native speakers of English.

Follow up on over 500 students who have taken the course since 1979 demonstrates that not only did their listening skills (as measured by the Brown-Carlsen Listening Comprehension Test) increase far more than those of control groups, but also that they demonstrate greater increases in GPA, credits earned, and positive attitudes toward themselves and their academic futures.

44. Loyola University of Chicago

Professors of physics, chemistry, and biology have long recognized that many students enter the introductory courses in these subjects with low expectations due to fear of the subject matter.

The Science Anxiety Clinic was thus instituted to identify students who fear studying science and to improve their science learning skills and help them overcome their anxieties. While not limited to freshmen, the majority of students in the program are in their early years of college. Since 1977, the Clinic has served 30-40 students per semester through instruction in reading scientific materials, in approaching scientific problems in a systematic fashion, in using problems to elucidate texts, and in interpret graphs. The Clinic simulates a science course, and while students are involved in learning skills, a psychologist helps them explore how they create their own anxiety and assists them in substituting more objective assessments of the task at hand. Relaxation reactions are also substituted for anxiety.

Pre- and post-tests of Clinic students showed significant anxiety reduction compared with a control group. In addition, students have reported changing career goals to scientific fields, or retaining science-career goals which they were contemplating dropping before the Clinic experience.

45. Marymount College of Virginia

The Change-Facilitator Model at Marymount College is a post-matriculation program in developmental education for underprepared students that departs from traditional remedial models.

Perceiving student needs in the general areas of academic skills and motivation, reading, mathematics and writing, the program minimizes elaborate supportive services, converts participating faculty to mentorship roles, uses mastery learning techniques, and increases time on task in compensatory courses.

The program thus seeks a comprehensive approach that is integrated with the regular academic program. Results include significant increases in GPAs relative to control groups (of probationary students), but depending on the combination of compensatory education courses taken by students, overall improvement was mixed.

46. Winston-Salem State Univ. (North Carolina)

The Supplemental Education program addresses the problem of a high attrition rate among academically underprepared students and tries to retain 70% of those who would otherwise be expected to drop out. It is a comprehensive remediation program for students with both high school GPAs of less than 2.0 and combined SAT scores of less than 650 (extraordinarily low compared to national norms). The program combines basic courses with peer tutoring, professional tutoring, and counseling. It is difficult to determine from the profile exactly what done in the various components of the program nor what real and long-term impact the program has on students since the standards involve merely passing grades in local courses. From the evidence presented, the secondary benefits seem stronger that the primary.

47. Hood College (Maryland)

The Admissions Seminar at Hood College is not so much a freshman program as a very creative recruiting mechanism that addresses some of the questions that freshman programs such as University 101 eventually consider. It is a one-day program for prospective students and their parents designed to expose them to the connection between liberal learning and careers, the necessity of liberal learning skills such as analysis, research, and problem solving, and, through such exposure, to insure that they fully understand the mission of the college.

The objectives of the program are carried out by conducting an interdisciplinary seminar on a subject, e.g. "The Truth About Lying," with a syllabus, readings, film clips, and (in this case) even magic

tricks (to stimulate thinking about the issue of deception). While the program is a recruiting vehicle, it also addresses the need for students and parents to understand the objectives and methods of higher education.

48. University of Nebraska at Omaha

The Goodrich Scholarship Program combines characteristics of both remedial and pluralistic models of educational opportunity. It recruits students traditionally denied access to college, provides them tuition waivers, offers supportive services to enhance their skills and confidence for successful completion of the baccalaureate, and requires them to complete a general education component involving a "culturally sensitive" interdisciplinary curriculum. The program was designed to make rigorous intellectual demands on its students, on the premise that low-income students have the same capacity for academic achievement as others, provided they are sufficiently challenged.

The Goodrich Program requires a special set of two courses each semester in the freshman and sophomore years. The freshman courses emphasize academic skills and the humanities; sophomore courses focus on tools of social science research, urban problems and public policy. Given the objectives of the program, we found it paradoxical that science and math were not given a similar treatment. There is no Goodrich curriculum for the junior and senior years, but support services and non-credit activities are available to all students in the program.

Faculty and graduate assistants, who combine teaching and counseling roles, provide continuity for the students. Program faculty hold courtesy appointments in the department of their specialty; and all were selected for their commitment to this type of experimental undertaking as well as for their academic credentials.

The program has been in operation since 1972, and its present enrollment is approximately 270 (of which 60% are minorities). Goodrich students are "non-traditional" in a variety of ways, and have included public assistance recipients, those who are incarcerated or on educational release, and those who do not possess traditional academic credentials for college admissions.

Recent evaluation studies indicate that Goodrich students performed above average in their Program courses and about average in non-program courses. Findings with respect to correlation between composite ACT scores and cumulative GPA after two years in college show a statistically significant association, but also indicate, e.g. that 71% in the low ACT range had cumulative GPA's of 2.0 or better. (ER)

49. Pace University (New York)

The Challenge to Achievement program at Pace enrolls selected underachievers into a carefully articulated freshman year program. CAP evolved from a provisional matriculation program at Pace in the 1960's, and, following a number of academic modifications, began operation in 1978.

The Program takes its form from the old idea of the freshman year as a complete experience, rather than two disjointed semesters. It assumes that this particular group of students needs time to mature, academically and socially, and a visible structure within which to do so. It also assumes that out-of-classroom help should be directly linked to realistically graded classes.

Limited to 230 students, the Program operates its own set of credit-bearing small courses, including 11 credit hours of English (as opposed to 8 for a regular freshman), and requires a set program of all participants, one that emphasizes history, biology, and math in addition to English. This strategy precludes the sense of bewilderment that freshmen express when they first encounter the wilderness of college course offerings.

It is difficult to determine much about the success of the program given the measures presented in the profile. The graduation rate (within 6 years of entrance) for CAP students currently stands at 39%, compared to 56% for the University as a whole, but it is hard to tell what that means. (ER)

50. Salem State College (Mass.)

"Avenues to Successful Communication in the Humanities" is a freshman program designed to link library and information resources with course content in the humanities--specifically in interdisciplinary courses in English, speech, and history. What the program seems to do is to expand entering freshmen's notion of "information" and "learning resources" by introducing them to strategies for searching for information, evaluating sources of information and utilizing resources other than books and media. Units involving these strategies form a carefully parallel sequence to the subject matter of all three substantive courses over 15 weeks. Developed and piloted (1978-1981) with grants from the national Endowment for the Humanities and the College Library Association, the program is now a regular portion of the Salem State curriculum, and serves 40-80 freshmen annually. It was disappointing that the materials submitted did not include any information on evaluation, since the implicit objectives of the program are extraordinarily important to students' success in their college careers.

Other Programs in this Category

Davenport College (Michigan)

The college requires entering freshmen with low high school GPAs (2.0) or less, GED or low placement test scores to enroll in a "College Achievement and Transition Program" that is designed to strengthen a student's self-discipline, self-motivation and self-confidence. The program includes curricular work in Business Math, Communications, basic English skills, computational skills and a particular emphasis on study skills. This is not a regular course program: classes meet a solid 6 hours per day. Nor does it appear to be a "trial admissions" program (such as # 26 above). But it is difficult to tell precisely what goes on.

Denison University (Ohio)

The Freshman Studies Program was recently adopted at Denison in response to the difficulties freshmen experience in registering for a coherent academic program. A three year pilot project demonstrated the advantages of (a) incorporating increased amounts of writing in all freshman courses; (b) extending the learning environment to dormitories; and (c) establishing relationships across disciplines and art forms in freshman program design. As a result, four courses have been developed as alternatives to satisfying current broad distribution requirements in fine arts, laboratory science, philosophy/religion, and history. However, a student need take only two of these alternatives.

PART C:

COMPETING MODELS OF GENERAL/LIBERAL EDUCATION

This is hardly the occasion for a lengthy essay on General Education, that portion of the college curriculum (usually confined to the freshman and sophomore years) through which the student is expected to acquire a breadth of knowledge. Nor is it the occasion for an essay on Liberal Education, the process by which the student develops both the critical, reflective capacities that liberate the mind and the awareness of self and sensitivities to the lives of others that free the soul. Nor, still, is it the moment for sustained discussion of General/Liberal Education, i.e. the combination of the structure and the process that has been at the core of the traditional baccalaureate experience.

The Commission commissioned a number of papers that touched upon these topics, but none in such a focused, thorough and eloquent manner as Zelda Gamson's, "A Little Light on the Subject: Keeping General and Liberal Education Alive" and Jonathan Warren's "The Faculty Role in Providing Evidence of Educational Excellence," pieces to which the reader is referred in lieu of our own poor thoughts. The six Commissioners who discussed those papers at a Panel on "College Curriculum: Shape, Influence and Assessment" (held at the University of Rhode Island on August 27-28, 1982) were lead to ask whether and how individual colleges and universities provided alternative ways for students to achieve the objectives of General/Liberal Education.

The question acknowledges much about both the diversity of students in American postsecondary education and the potential flexibility of colleges and universities in offering--within themselves--competing frameworks to advance different groups of students toward similar ends.

We received approximately 20 profiles and other documents that could be analyzed under this rubric. What is their principal theme?

While they may be a bit sloppy in their use of terms such as "interdisciplinary" (biopsychology, for example, is an inter-discipline; whereas most of what is described in the profiles at issue is really "multi-disciplinary"), our colleges are making a genuine effort to integrate knowledge. It is an uphill battle waged by some valorous warriors, since what stands in the way is the awesome power of departments and the overwhelming disciplinary orientation of our postsecondary institutions.

In its contemporary interpretation, "integration" seems to involve core curricula; and if we look at these documents, "core curricula" seems to mean a set of common, required learning experiences for all who choose to participate in a given program. That is, in most cases, students have to buy in; but the chances are far greater that they know what they are buying than in the distribution schemes that dominate General Education requirements in American higher education. At the same time, the intent of the core curricula is clearly to overcome the fragmentation of knowledge that occurs in distribution schemes and to

invest the concept of "breadth" in learning with a more coherent meaning than introductions to the languages of the various disciplines.

Too, these new variations on the theme of core curricula often seek integration by focusing on specific cognitive capacities, hence start with the student, not with the subject matter. In so doing, they must experiment with traditional course organization and sequencing. One significant by-product of those experiments appears to be a very substantive version of team teaching in which faculty make sure that their assignments are mutually reinforcing. In order to do so, the organization of faculty work changes radically: from the isolated scholar to the group--and with that, to a true community of learners.

51. SUNY at Stony Brook

One of the more unusual creations in American higher education, the Federated Learning Communities (FLC) at Stony Brook have catalyzed a coherent set of solutions to some of our major academic pathologies and have come to serve as touchstones for analogous efforts in a variety of institutions.

FLC grew from an institutional self-study carried out by Stony Brook in 1973-75. The self study underscored three major pathologies:

- o the mismatched expectations of students and faculty;
- o the unintelligibility of a curriculum ordered and dominated by the disciplines;
- o and, most importantly, the "privatization" of the academic experience for both students and faculty.

Each of these pathologies works against the intended unfettering force of Liberal Education; and the document submitted to the Commission contains a trenchant analysis of their causes and consequences. The program establishes a clear alternative to pursuing the goals of Liberal Education and simultaneously serves the ends of faculty development. Basically, it nurtures a set of small "academic communities," each of which pursues a theme, e.g. World Hunger, from a variety of perspectives, e.g. Anthropology, Biology, Philosophy, Political Science, and Economics. The objective is intellectual--and not disciplinary--coherence. In consecutive but cumulative semesters, the faculty in this community offer existing undergraduate courses as a package which functions as an alternative route for satisfying General Education distribution requirements. The faculty becomes a "federation," sharing notes, coordinating assignments and team teaching a core course on the theme.

Thus described, FLC seems to resemble a "cluster college," at least as those exist in a number of residential institutions. But what makes the FLC more than a cluster college program are two key persons in each learning community: the Master Learner and the Mumford Fellow. The Master Learner is a tenured faculty member who becomes a student, preferrably in a field far removed from that of his/her training, enrolled in the same set of courses (writing papers, taking examinations) as all the students in a particular learning community.

The demands on Master Learners are extraordinary: they role-model learning and personal development for undergraduates, provide feedback to the federated faculty on the effectiveness of their teaching, and must maintain intellectual humility and tolerance for the ambiguity of their roles. This Master Learner model is eminently transferrable to other institutions.

The Mumford Fellow is an advanced graduate student who shares the duties and experience of the Master Learner, and who hence is prepared for his/her future instructional role. This does not happen much in research universities dominated by the "privatization" of academic life.

The program has been evaluated by a variety of measures. Compared to non-FLC students in the same classes, FLC students earn higher grades, are more involved in course work, are more aware of world problems, demonstrate increased tolerance for ambiguity, contradition and paradox, and move further on scales of intellectual and moral development. The personal and professional aspirations of participating faculty have also been measurably enhanced, an important outcome at a time of increased stagnation and lack of mobility in the academic workforce.

52. SUNY at Potsdam

As originally proposed in 1976, the School-Within-the-School of SUNY Potsdam's School of Liberal Studies was to have been a four-year alternative General Education program of interdisciplinary courses and activities, but has since been scaled back to a two-year lower-division sequence. The first year program consists of three interdisciplinary "foundations" courses organized around themes such as power and authority (social sciences), relativity (sciences) and the quest for self-understanding (humanities), and accounts for all the student's coursework for the year. The second year requires 6 credit hours per semester of seminars, though it was difficult to tell precisely what these involve.

Although formal evidence of program impact is not yet available, faculty and administrators perceive the program to be successful in that it fosters closer contact between faculty and students than would be the case in the regular 39-credit General Education distribution program, and sharpens communication skills by requiring a considerable amount of writing. (ER)

53. Miami University (Ohio)

When Miami University purchased the adjacent Western College in 1973, the faculty was solicited for proposals for a new academic division, from which emerged the School of Interdisciplinary Studies (a.k.a. The Western College Program).

The School of Interdisciplinary Studies is a total experience, not merely an academic program, and reinforces its distinctive features as a community of learners with a residential base (a dormitory that also includes faculty and administrative offices for the program). Purposefully small (300 students out of 15,000), the program serves

students whose intellectual and demographic characteristics are typical of the University as a whole, but who are attracted on entrance to an unusual way of attaining the baccalaureate.

In contrast to a classic distribution system for General Education in the rest of the University, the School of Interdisciplinary Studies requires a 64 credit core curriculum that covers the first two years of college. That curriculum is organized thematically (e.g. Creativity and Culture, Natural Systems, Social Systems), draws heavily on original source material, and emphasizes the development of synthetic reasoning (an oft-neglected but critical objective of undergraduate education).

In the spring semester of the sophomore year, students must propose an individualized major, including 32 semester hours of advanced coursework that, in combination with other proposed activities and a Senior Project, will enable them to fulfill the educational objectives they articulate. Interdisciplinary seminars in the program augment this major through the junior and senior years.

Cutting through the entire program is a four year developmental writing model, close advisement and guidance (particularly necessary to help students clarify their own expectations and goals), and the option of field and/or foreign study requiring considerable preparation.

Formal evidence of program impact is slight; but it does not surprise one that all-college student leaders would tend to emerge from an environment such as Western, nor that the retention rate for Western students would be considerably above that for the University as a whole, nor that nearly half the program graduates have continued their education in either the disciplines or the professions.

54. Pacific Lutheran University (Washington)

The Integrated Liberal Studies Program at Pacific Lutheran coexists with and supplements a "distributive core" (a euphemism, it seems, for a controlled General Education distribution requirement). Like other similar undertakings, it is organized around a theme, "The Dynamics of Change," that helps students connect their own growth with paradigms of evolution and revolution in science, the arts, and society.

Basically, this is an alternate core curriculum that, instead of being confined to the lower division, is sequenced in three "tiers" over all four years of the baccalaureate experience. The freshman component is a two semester course in Western culture since the Renaissance. The sophomore and junior component consists of two-year sequences in:

- o Human Responsibility (ethics, genetics, developmental psychology, comparative anthropology, etc.);
- o Word and World (symbol systems in mythology, religion, art, literature, mathematics and science);
- o Limits to Growth (technology and social values, economic, geopolitics, and Christian ethics).

A junior/senior "tier" overlaps the second, and involves both a seminar and a "substantial" independent interdisciplinary research project emphasizing a theory of change--the theme of the program.

While there is considerable attrition among students initially electing this alternate Core, other students take Integrated Studies courses either as electives or to fulfill requirements in the "rival" Core. The flexibility of that approach allows the "competition" to remain healthy.

55. University of Iowa

The Unified Program offers freshmen and sophomores at the University of Iowa an alternative way of fulfilling their General Education requirements through a series of specially designed and integrated courses. The program relies upon distinguished senior faculty for instruction; and, while designed for "good students" interested in challenging work, is distinct from the Honors Program (see #86 below). The only screening factor consists of the student's eligibility for an advanced, one-semester Rhetoric course, a criterion met by half of the incoming freshmen. Beyond that, a "good student" is not defined.

Titles of courses (Rhetoric, Politics, Math, Geology, Humanities, History, Astronomy) really do not help us understand what happens in the Unified Program: a purposeful process within a wholly prescribed curriculum by which either the same material is treated in different courses and from different perspectives or by which the assignments in one course prepare students for tasks in another. The former, in particular, is essential to the goals of Liberal Education. At the same time, the process heightens the sense of community among the students involved, and contributes to their overall academic achievement--though "achievement" was not defined in the document submitted. (ER)

56. University of Iowa

As evidenced in the tone and presentation of the profiles we received for both the Unified Program (#55) and the Program in Literature, Science and the Arts, what the University of Iowa seems to encourage are faculty entrepreneurs with highly personalized yet unreproachable versions of liberal education. While these faculty seem delightfully unburdened by the enrollment mentality (e.g. "students have never appeared in large numbers"), the programs evidently develop enough following among students and colleagues to carry them for years as semi-autonomous academic states. Should the principal mover retire, there is a clear succession.

In a large state university, such islands provide both students and faculty with a critical sense of identity; though no one seems concerned with operational objectives or with comparative measurements of student success. The phenomenon reminds one of the medieval custom of the student buying instruction directly from the faculty member instead of from a bureaucratic university.

The Program in Literature, Science and the Arts is just such an informal alternative--and in terms of both organization and curriculum. Its

processes are governed by traditions, not rules, e.g. the courses are "great books" discussions, taught by two professors (often, one experienced in the program teamed with a novice), and dominated by the Socratic method. They carry titles such as "Myth and Reason," "Form and Milieu in the Arts," and "Science and the Nature of Man." But as the profile we received wisely but sadly observed, since "the rewards for the teaching faculty are probably more personal than professional," very few untenured faculty participate.

57. College of the Holy Cross (Mass.)

In the face of a lack of intellectual coherence in the curriculum and the tendency of academic departments to emphasize highly specialized courses for majors, the Interdisciplinary Studies Program (ISP) at Holy Cross sets out to develop students' analytic and synthetic thinking skills, to expand students' awareness of the complexity of human values, and to provide an alternative and rewarding teaching experience for faculty.

ISP bears some resemblence to the Unified Program at Iowa (#55 above) in that it relies on sequences (combinations of two or more courses taken in the same time period) designed to integrate with and reinforce each other. The program currently offers 18 such sequences, e.g.

- o Economics, Values and the Human Condition (history, economics, religious studies, and biology);
- o Interpreting and Making the World (physics and philosophy);
- o Gender Differentiation (genetics, psychology, sociology, history, and literature).

Faculty attend each other's classes, both to insure integration of material and to discuss disciplinary biases and perspectives. Nearly all of the college's departments are involved in these offerings, and participation by department chairs and tenured faculty is high.

Unlike many similar programs, this one has undergone a textbook-case evaluation. ISP and non-ISP students were compared using the Test of Thematic Analysis (which measures the ability to compare, contrast, and reorganize materials in order to draw conclusions) and the Analysis of Argument Test (which measures intellectual flexibility). While the statistical evidence was not overwhelming, there was a clear indication that ISP students demonstrated greater pre/post gains than students in the control group. The external evaluator who conducted this assessment concluded that the data suggest "that the actual experience of having to integrate two or more disciplines at the same time, guided by a faculty committed to and encouraging such integration, brings about greater cognitive growth than does studying the same material in separate courses without the consciously designed integrative rubric."

The program is voluntary, but a number of departments accept sequences as satisfying requirements for the major. In light of the external evaluator's judgment, the program would probably function even more effectively if courses in the major were also paired to integrate

material, and the Holy Cross faculty is considering proposals to do just that.

58. University of Utah

This is not a case of competing models within the same institution, rather that of an evolving program that draws upon faculty from every college in the University to achieve its dual mission:

> (1) To promote synthetic reflection on social and economic justice, respect for individual rights and differences, dedication to the common welfare, and humane action to alleviate suffering;
>
> (2) To provide undergraduates a comprehensive intellectual framework on which to build disciplinary expertise.

In these two roles, the Utah program places a heavy emphasis on civic education (broadly conceived) and on the growth of generic capacities of mind.

The program has been solidly institutionalized since 1975: there is a Liberal Education Council, a deanship, and a budget drawn from college and departmental funds to purchase faculty released time (a very clever administrative strategy as it rewards those colleges and departments that cooperate). The program screens both faculty and core course proposals, and invests heavily in faculty development activities.

But how does it all work? There is a standard set of distribution requirements (six courses spread across four major fields) which are augmented by three 5-credit courses organized around problems approached from a multidisciplinary perspective. These courses bear titles such as "Creative Arts and Western Thought," "Patterns of Problem Solving," and "The Use and Abuse of Social Science." Some 65% of Utah students take more than the minimum required, a tribute to the quality and/or attractiveness of what lies behind those titles.

As the profile submitted to the Commission puts it, "the importance of course content and instructor vitality" are "co-equal," and to that end, the Liberal Education Council:

> (1) has provided course-development grants to faculty on a competitive basis;
> (2) has developed a special rank of "University Professor" to be awarded annually to an "exemplary undergraduate teacher," and carrying with it two full terms of released time to work on undergraduate curriculum reform;
> (3) has implemented an annual Visiting Professorship to bring a reknowned scholar to teach one semester in the Liberal Studies program; and
> (4) publishes a quarterly newsletter on Liberal Education, sponsors an annual faculty retreat and conducts a series of faculty colloquia.

Most importantly, the Dean of Liberal Education writes comprehensive letters of recommendation in the tenure and promotion process, thus reducing the peril of pedagogical risk-taking for junior faculty.

These are no mean steps. They are wise; they are critical; they announce that the University takes Liberal Education and undergraduate teaching very seriously; they seem to flow naturally; and they are worth investigation by other universities contemplating a revitalization of both Liberal Education and the teaching function.

59. St. Joseph's College (Indiana)

St. Joseph's is a small (1,000 students), rural, Catholic, Liberal Arts college that has taken a 45 credit core curriculum and spread it over all eight semesters of a student's baccalaureate career. There is no issue of alternative models here; rather, the St. Joseph's model is "in competition" with typical practice at other institutions in that its thoroughly integrative model stands in stark contrast to distribution schemes.

The focus of the successive segments of the St. Joseph Core Program evidence a progression from self to Western Civilization to global and cosmic perspectives. In the process, the student moves from analysis to synthesis (covering history, science, and cross-cultural studies) under the guiding motto of the program, primum vivere, diende philosophare ("let theory grow from experience"). At the same time, the program includes a student skills-development component that seeks to preclude linguistic "recidivism," i.e. the tendency of students to revert to previous patterns of speech and writing after passing freshman English.

Assessments of the program since its inception in 1969 confirm the college's belief that general education is more than a series of introductions to everything; that it can be developed on models other than specialized graduate education; and that a community of seekers after truth can be supported in an environment frankly committed to values and the integration of learning. (ER)

60. Mount Ida College (Mass.)

The Bachelor of Liberal Studies Program at Mount Ida is directed specifically at transfer students from community colleges. The program recognizes the discouraging inequities of arbitrary transfer guidelines that often force these students back into the freshman or sophomore year. The undue financial and academic burden that results can only increase the attrition rate.

So Mount Ida accepts the community college degree (or its equivalent), whether the curriculum pursued was vocational or general; but it requires the transfer student to meet the basic 39 credit Mount Ida Liberal Arts core program requirements by the end of the junior year. While the profile did not explain exactly how that is accomplished, there must be some double-accounting, i.e. some of those community

college courses have to be credited toward the Mount Ida requirements or there has to be a summer component to the program.

It is the senior year, however, that carries the full burden of interdisciplinary Liberal Studies, thus inverting the traditional sequence in General Education. There are two components of that senior year program: 7 interdisciplinary seminars and a senior project carried out under a mentorship, allowing students to achieve some degree of specialization.

For purposes of careful monitoring in its early years, the program has been limited to 30 students. As the program is comparatively new, evaluation data do not yet exist; but the college has the opportunity to develop some convincing measures of student achievement.

61. Sacramento City College

Project HELP is a two-semester liberal arts package for community college students who simultaneously evidence the need for remedial work. Started in 1978, the project uses the Stanford Test of Academic Skills to identify eligible students, and thus has an instant baseline for measuring its impact.

We include the program under this category (as opposed to "Retention Strategies and Academic Work Skills" in Volume II) because it offers students two options (a total of 24 credits) for fulfilling the Liberal Education requirements of the A.A. degree. The options consist of course packages taught by the same group of instructors:

Option 1: Psychology of Personal Development, Speech, Developmental Reading, Arithmetic, Technical Work in Today's Society

Option 2: Marriage and the Family, Practical Communication, Developmental Reading, Human Development

By involving the same group of instructors in these packages, the college can utilize them as teachers, counselors and tutors simultaneously. Since the program serves many non-traditional students (those who had been turned off by the system, older re-entry women, language minorities, etc.) it perforce involves a great deal of personal counseling and extensive tutoring. A key premise of the program is that the development of a positive self image and positive attitudes about college precedes cognitive development; and the profile describes at some length the various ways in which the instructional team in each option seeks to build those prerequisites to learning.

Project HELP employs many measures of student progress and program impact (both standardized tests and assessments and continuous classroom devices). Option 1 seems to have greater positive impact on students' communication skills; but the subsequent retention rate is very high for students completing either Option. In addition, a comparative analysis

revealed that HELP students attempt and complete more units at higher grades than their peers who chose not to enroll in the program.

62. Lafayette College (Pa.)

A number of colleges and universities revised and strengthened their lower division General/Liberal Education curricula in the late 1970s. However noble and successful these efforts in improving students' skills of intellectual inquiry irrespective of disciplinary orientation, they lacked any continuity after the sophomore year. Many students found themselves jumping from interdisciplinary core curricula to highly specialized, vocational majors with no sense of the way in which these two major components of their curriculum were related.

In 1978, the faculty at Lafayette recognized the essential incoherence of that approach, and, in restructuring the Liberal Education program, included a Senior Colloquium designed to address larger questions of educational values, e.g. (and to quote their profile) "how interdisciplinary methods relate to the world of knowledge; how the integration of theoretical and applied learning occurs; how ethical choices evolve from intellectual discipline; and how a cultivation of the liberal arts and broad general learning can result in the highest values of 'vocationalism'--a comprehensive view of career and life pursuits. . . ."

Instead of regarding the Senior Colloquium as a capstone, Lafayette clearly looks on it as a cornerstone. To date, two topics have actually been offered in the program: "Darwinism" (the impact of evolutionary thought on biological science, literary humanism and social science), and "Regional Studies" (in this case, the cultural, industrial and economic ramifications of coal mining in Pennsylvania). One must assume that the educational values cited above are clearly articulated in those courses; though it is difficult to determine precisely how that is accomplished from the material, and more difficult to determine how impact would be judged.

63. Lynchburg College (Virginia)

Although the Senior Symposium (also open to juniors) is considered an integral part of General Education requirements at Lynchburg, its courses are intended less to reflect on previous education than to anticipate further education. The Symposia assume that by the upperclass years, the cognitive development of undergraduates has reached the stage of "synoptic comprehension," that is, the ability to place knowledge and experience in broad contexts and to exercise "responsible evaluation" of controversial dilemmas in social policy, morality, art and religion.

It should come as no suprise, then, that the content of the Symposia is organized around grand, generalized themes ("The Nature of Man," "Freedom and Tyranny," "Science, Technology and Society," etc.), the Fortune 500 of the philosophic and literary world, and the great books.

Each theme is addressed for three or four sessions of the course, and each session is run by a different member of the faculty. The burden of shaping knowledge is thus fully--and appropriately--on the student. A significant amount of writing is required: weekly paragraph responses to questions, monthly themes, and a final take-home examination paper. The information we received contained no assessment of impact.

64. Maharishi International University (Iowa)

As in the case of the St. Joseph's core curriculum (see #59), the "competition" here is between one institution's approach to Liberal Education and more traditional practice elsewhere. The Holistic Development Program at Maharishi distinguishes between education as a process of imparting information and learning as a method of increasing intellectual and creative capacities. Thus distinguished, the Maharishi program focuses on learning.

A goodly amount of psychobiological theory lies behind the approach, which thus seeks to increase neurophysiological integration as a ground on which students receive information and expand their consciousness. Thus all students practice Transcendental Meditation twice daily for 20 minute periods, a procedure which is purported to yield both deep physical rest and "pure awareness," during which the individual is conscious of neither external stimuli or (one assumes) mental images derived from experience. An advanced version of this procedure, the TM-Sidhi program, is introduced after six months. Courses in "Themes of Human Development" extend the learning of these procedures into the world of words.

The Holistic Development Program is not a surrogate for traditional courses in traditional disciplines; rather, it adds to and changes the framework within which students learn that material. The evaluation of its impact--particularly in terms of physiological measures (EEG coherence, H-reflex)-- is thus a bit difficult to judge. Maharishi operates a comprehensive longitudinal study on its students that in time may provide evidence of a relationship between Holistic Development and the enhancement of discrete cognitive capacities.

65. Northeastern University

To judge from this very rich portrait, the Competency-Based History of Western Civilization course at Northeastern is a carefully crafted piece of instructional design that illustrates an alternative way of presenting the traditional material of a Liberal Education program. The faculty began as too few faculties begin: by stating their objectives clearly and distinctly, and by trying to understand the most direct and efficient way of actualizing those objectives in instruction. They determined that the role of a Western Civilization course in student learning would be two-fold:

> 1) to serve as a framework within which students could come to understand their major fields and "against which to judge their own values and roles in society";

2) to develop analytical and critical capacities of mind by "extracting meaningful information from the welter of historical data," and by being consistently challenged "to make rational judgments supported by valid evidence."

More specifically, the faculty identified four "intermediate skills" necessary to the achievement of those broader ends, e.g. using other disciplines--literature, climatology--in interpreting historical data. Instructional packets have been designed for each of these skills. Each packet defines the skill, and provides both reading and questions designed to help the student through the reading and toward mastery of the skill.

Bloom's taxonomy was superimposed on the traditional temporal and spatial divisions covered in Western Civilization courses. For each topic, e.g. the Industrial Revolution, students are first required to acquire information, then apply it to other areas, and finally synthesize and evaluate it. A system of videotaped lectures keyed to an outline and textbook accompany this approach, enable the student to retrieve information, and allow the faculty more time to devote to the small group "colloquia" that are at the organizational heart of the course. Graduate assistants tutor and assess student mastery of the informational phase of presentation.

The program has been in operation since 1974. Surprisingly, there has been no systematic evaluation; though administrative and student response has been justly positive.

Other Programs in this Category

The Commission received a number of documents concerning revisions of General Education programs and/or alternative approaches to Liberal Education that were either in planning or very early implementation phases. These included:

Wheaton College (Mass.)

The aim of the program to Integrate the Study of Women into the Liberal Arts is to incorporate women's studies scholarship into introductory courses in all disciplines of the humanities, social science and natural science. This is a three-year development effort being conducted through workshops for faculty, lecture and film series, and monthly discussion groups. To date, separate seminars on both theory and new literary perspectives have been established, while the more difficult task of integrating gender-balanced scholarship into disciplinary courses are well underway in a number of departments. The project should achieve not only its own ends but a better understanding of the process of curriculum transformation. (ER)

Ohio University

In 1979, the faculty of Ohio University created a new "common" General Education program structured in three fairly standard tiers: (1) Quantitative Skills and English Composition (including an advanced

composition course or its equivalent), (2) Coursework in four or five distribution areas that the student organizes in clusters to allow integration, and (3) a multi-disciplinary Senior course emphasizing synthetic thinking. The first two tiers are in place; the third comes on-stream on an experimental basis in 1983.

George Mason University (Virginia)

The proposed revamping of General Education requirements at George Mason is structured around two curricular strands: (1) Codes, Symbols and Information, and (2) Values, Themes and Cultural Problems. Within these strands, 12 integrated courses are being developed for students to complete within the first 60 credit hours of college work. From a preliminary reading of course prospecti, it appears that linguistic, mathematical and computer skills will be heavily emphasized and integrated into a number of areas of the curriculum.

PART D:

THE RECONCILIATION OF LIBERAL ARTS AND CAREER EDUCATION

The interests of the Commission in the conflict between vocationalism and the Liberal Arts at the postsecondary level were first stirred by a panel discussion it held in Philadelphia on April 30, 1982 on the subject of "Performance Expectations in American Education." On that occasion, representatives of major employers in the private and public sectors eloquently discussed with the Commissioners the need for a greater emphasis in undergraduate education on programs and strategies designed to develop generic capacities, not technical skills. Specifically, the employers who testified before the Commission in Philadelphia and on subsequent occasions described their expectations for college graduates in terms of:

(1) Generic mental capacities such as:
- o the ability to look for, identify and undertake an analysis of change, regardless of field;
- o an understanding of the nature of evidence and what constitutes adequate evidence in the several broad areas of knowledge;
- o holistic and creative thinking abilities;
- o differential perspective, i.e., the ability to set existing knowledge and analysis in new contexts.

(2) Generic traits or attitudes such as:
- o adaptability and tolerance for ambiguity and complexity;
- o the ability to learn and work in groups;
- o persistence in coming to closure on an idea or issue; and
- o enthusiasm for work.

Those expectations, the Commission was advised, can be fulfilled in many ways in the undergraduate curriculum, but are most likely to be fulfilled by a strong Liberal Arts component. And yet, as Secretary Bell observed in his address to the 1983 Convention of the American Council on Education, colleges have become excessively vocational in their course and program offerings and that some are in danger of becoming little more than "glorified work preparation institutes." In an unhappy paradox of American education, the very fields that the Commission eventually recommended to be strengthened at the secondary school level are the fields that are being eroded at the postsecondary level through the emphases cited by the Secretary.

The tension between the utilitarian and the normative is an old one in American education. But today we wonder whether the source of the drift "away from the purpose of higher education" (Secretary Bell) lies primarily in the supply-side actions of colleges and community colleges in developing and marketing programs, or in the demands of students and their families for career preparation, or in the expectations of employers? That is a big and tough question that our collection of documents addresses but indirectly. That is, we assumed a situation of demand-push for career/vocational/pre-professional programs against traditional institutional missions emphasizing the development of the

mind and soul in a far broader sense through the Liberal Arts. Since there was a great deal of rhetoric out there about this phenomenon, we--and the Commissioners--were curious as to what our colleges were doing about it, i.e. how they defined and went about the business of reconciling the goals of career and Liberal Arts education through specific programs.

One unfortunate reflex in the rhetoric is to equate "careerism" at the postsecondary level with programs in which the baccalaureate is simultaneously the first professional degree. We thus ignore the considerable evidence that the traditional Liberal Arts disciplines themselves have become increasingly specialized and pre-professional in orientation. Nonetheless, the pre-professional/professional reading was the most common interpretation about those who responded with profiles in this category.

Judging from the limited number of profiles here, along with readings in the broader literature, there seem to be four ways in which our colleges and universities approach the "reconciliation":

The Liberal Arts Add-On

The first assumes that, if left to their own devices, college students would elect the Liberal Arts; and only choose career-oriented programs under the external motivation of a greater promise of first employment. Given that situation, this approach implies, all one has to do is to require or otherwise entice students in pre-professional or professional programs to take more Liberal Arts courses and--abracadabra--they will develop those theoretical perspectives and appreciations of the social and ethical dimensions of professional activity that we all desire. What surprised us in this context was that we received no profiles of the considerable number of existing programs that combine undergraduate business administration with foreign languages and/or international studies.

Professional Education as Liberal Arts

The second assumes that the majority of students have no use whatsoever for the Liberal Arts and will transfer or choose other colleges rather than wade through what they perceive to be an uninspiring trench. Since colleges do not particularly care to lose enrollments, some have redefined the Liberal Arts so as to include some aspects of pre-professional education. Again, the focus is on the course; and a prime example might be including "Introduction to Management" in the Liberal Arts "core."

The Liberal Arts as Method

The third approach does not assume anything about student proclivities, but much about the difference between education and training. The former challenges and expands--hence, frees--the mind; the latter does not. The activity that accomplishes the desired end is teaching method, not course or subject. Thus, Liberal Arts and professional program

courses are not considered mutually exclusive sets. Faculty development becomes the strategy by which engineering, e.g. becomes a Liberal Art, though that does not mean clumsy courses in "Poetry for Business Administrators."

The Career Add-On: the Liberal Arts Co-op and Others

This is an honored tradition in American higher education. It assumes that a controlled work experience with academic objectives is an essential part of liberal education, that knowledge without practice is blind even while practice without knowledge is empty, and that the student who moves back and forth between the two develops a critical differential perspective. The preferred model of execution is cooperative education for students majoring in one of the traditional liberal arts disciplines (hence distinguishing itself from the internship or practicum of baccalaureate professional education), and involving alternating periods of work and study. The reader of these pages will note, however, that there are other promising approaches to the career ad-on.

What all four approaches try to address, though, are the indisputable features of professions such as engineering, law, medicine, teaching, architecture, nursing, accounting, pharmacy, journalism, and business administration. All of them:

- o Possess a history, and emerged and evolved as a result of larger forces and technological developments;
- o Evidence distinct cultures, norms, and socialization processes;
- o Manifest a distinct organization of work and different environmental conditions;
- o Are regulated both by themselves and by the public (through licensure, certification, etc.); and are surrounded by adversarial relationships in a litigious society;
- o Involve client relationships, hence activities subject to ethical judgment, and activities requiring more than passing psychological and social awareness.

While there is a great deal more one can say about the professions, the point here is that the successful practitioner is required to have learned and internalized the range of knowledges and capacities necessary to address those characteristics. How we get students from here to there is what many of the following programs try to accomplish.

66. Smith College

The Dual Degree program in Liberal Arts and Engineering offered by Smith College and the University of Massachusetts presents a variation on a pattern of degree organization that was more in vogue a quarter century ago than now. The traditional yoking required three years of a liberal arts program, followed by two years of an engineering program. Smith and UMass present, instead, the option of either a 5-year curriculum leading to the Smith A.B. and the UMass B.S. in Engineering or a 5-6 year course of study leading to the Smith A.B. and the UMass M.S. in Engineering. The first option was offered in 1976; the second

inaugurated in 1978. Both offer the opportunity to study liberal arts and engineering simultaneously instead of successively.

There is a philosophical commitment here that overcomes the logistics of moving students back and forth between campuses some 10 miles apart (even though both schools are quite accustomed to such arrangements). In the words of the program director, it is that "the potential benefits from improved knowledge and technology can be realized more fully when the engineers who develop and apply such advances bring to their task an awareness of the human values and societal concerns by which technology must be governed." Given such a statement, the program posits a set of implicit objectives that are nigh impossible to measure, but the resulting program organization thus starts students with a heavy dose of science and math in the freshman year, followed by a balance of Engineering and Liberal Arts courses for the next three years, and capped by a fifth year dominated by Engineering. Along the way, Smith College students complete a regular major, usually in Chemistry, Economics, Geology, Physics or Math.

In addition to courses, students are encouraged to spend at least one summer working on a paid research internship, with the research project often extended through the senior year as honors work.

Student success following graduation has been marked: graduates are actively recruited by industry; and are also able to complete graduate degrees ahead of schedule.

By virtue of their experience with this program, the two institutions have also instituted an annual workshop for secondary school personnel to enhance their awareness of employment opportunities for women in engineering and technical fields and to encourage high school women's study of math and science.

67. Arkansas College

The Historic Preservation curriculum at Arkansas College is comparatively new (1982), but worth remarking on, and not merely because it demonstrates the responsiveness of a field to both community needs and student interests. In an age in which the assembling and analysis of archives has become extraordinarily important in business and government and in which concern for the environment has extended to the identification and preservation of the man-made, it is ironic that the study of history has declined dramatically.

In an eloquent, sensitive and moving justification for the revitalization of history in our colleges, Arkansas College calls for a balance between popular and academic history:

> "Popular history, left to its own devices, creates an imaginary past; academic history, denying the human need for a living tradition, digs its own grave in arid soil. This artificial separation has created a situation in which large numbers of people in small communities throughout the nation deplore deeply the crumbling away of buildings, crafts, landscapes, and other physical

> remains of their heritage but lack the leadership and historical expertise to generate plans for protection of historic resources. This large group has generally been ignored by academic historians who now face a genuine crisis in enrollment in traditional history courses from which vitality seems to have fled."

The 60 credit track in Historic Preservation was developed with the guidance of a list of job skills and understandings sought in employees by an Advisory Board of representatives of museums, state departments, and arts centers. It involves both standard courses in U.S., European, and Art history, and such specialized courses as Methods in Regional History, American Decorative Styles, Folklife, Archive Administration, and an off-campus internship/practicum in historic preservation. Teaching methods are matched with the learners, who are nearly all first-generation college students, largely from poor rural environments, and who seem to learn best in active modes engaged with concrete materials.

At the same time, a continuing education course in the field was offered to area residents. The continuing education course not only served as a lever for program development but also established strong community ties for future students and their work in the field. In the process, it also stimulated the development of a Mid-South Humanities Project involving school teachers in program workshops. Such developments must serve as positive interim indicators of program impact.

68. SUNY at Binghamton

Perhaps the reconciliation of career and Liberal Arts education can best be encouraged and executed at the graduate level. If the current pattern of expectations in American education can be altered so that undergraduates pursue Liberal Arts interests at the college level and reserve the acquisition of job qualifying skills, knowledge and credentials for the graduate and first professional levels, then we may be able to revitalize a tried and productive model. The Master of Business Administration with a specialization in arts administration at SUNY/Binghamton illustrates one way of proceeding.

The MBA/Arts program was inaugurated in 1974 after planning efforts that included task force participation by state and national arts organizations. Program faculty are drawn from both the School of Management and the School of Arts and Science, and include adjuncts with expertise unique to the needs of the program. Students are selected on the basis of strong aptitude in management skills, devotion to the arts and an interest or proficiency in at least one discipline of the arts (presumably acquired in college). The University admits 15-20 students annually in this program; and many of those students have prior experience in middle-level management.

The program of study emphasizes the development of those skills normally associated with nonprofit institutions, as well as the broad management concepts and technical skills that come with the core MBA curriculum. Students' work culminates in a semester-long internship in an arts organization. There have been some 80 graduates of the program to date,

most of whom have gone on to leadership roles in the development and stability of arts organizations. (ER)

69. The University of South Florida

Another graduate program worth recounting in this context is the decade old M.A. in Applied Anthropology at the University of South Florida. The profile presented a very rich description and reflection that one could place in a number of our categories (e.g. Assessment), but we place it here because of its emphasis on a co-op type internship.

Through specialized tracks in applied urban anthropology, applied medical anthropology and public archaeology, students are first trained in, then extend, the conceptual, empirical and methodological tools of anthropology to the resolution of problems in such areas as human rights, hypertension, or community redevelopment.

The internship is perceived as the commencement of professional practice. The student proposes a field project which is carried out on a co-op model within a human service agency (and with both faculty and agency supervision). As the profile notes:

> "Realistic exposure to agency life permits the student to use the anthropological perspective, to see the problems of modern agencies and organizations in their widest relevant context and to see them the way the natives see them."

While it was difficult to determine the procedure, an elaborate assessment has evidently accompanied the internship as a way of evaluating the program. The basic method of the assessment, one infers, is a weighting of the importance of generic academic competencies for subsequent employment--something one can best judge after one has been employed. Both students and agency supervisors ranked the competencies and agreed on the essential nature of "holistic point of view," "comparative perspective," and "appreciation for a pluralistic society"--though what these mean in an operational sense was not indicated. What is significant, though, is that students judged baccalaureate level coursework to be most important in acquiring these competencies.

On both the baccalaureate and masters' level, too, students and agency supervisors ranked communication skills as the most critical set of competencies for success on the job. These included report and narrative writing, editing, conducting meetings and making oral presentations. Indeed (and it is not surprising), the National Commission heard the same assessment from a variety of employers, large and small.

70. Northeastern University (Mass.)

Both humanities and professional school faculty at Northeastern have long been concerned with the narrow career orientation of their students, most of whom major in engineering, business, the health

sciences and criminal justice, and almost all of whom participate in the University's seminal cooperative education program, alternating semesters of study and work. The culture of the University is a culture of careers. While that provides external motivation, it often prevents students from internalizing the reward system necessary to develop the skills and knowledge of the generalist that are more necessary after the entry-level job.

The Humanities and the Professions Program was developed to respond to this situation. It started with four courses in the history department (Technological Transformations of Society, Historical Perspectives on Illness and Health, History of Criminal Justice in America, and History of the Professions) and a few in Philosophy and Religion on the ethical dimensions of medicine.

On the basis of these experiences, and with the assistance of the National Endowment for the Humanities, Northeastern developed 21 courses with the involvement of appropriate professional school faculty. Though courses are largely team taught, they are offered through the departments themselves, not a separate center. The Colleges of Pharmacy, Business Administration and Criminal Justice have now each hired at least one humanist, and the social science departments have increased offerings in policy areas relevant to the professional schools. Communication between traditionally isolated colleges has been enhanced, and faculty research has developed out of themes presented in these new courses.

Enrollments in the new courses understably vary, with some (e.g. "Man and Nature in America") more fragile than others (e.g. "History of Flight and Space"); but the revitalization of the humanities implicit in the strategy has had multiplier effects. While the program has been subject to student, faculty and external evaluation (all responses favorable), there are no measures of changes in student learning or attitudes. (ER)

71. Albion College (Michigan)

The Liberal Arts Program in Professional Management is a variation on the traditional co-op model, and was established in 1973 to provide a select group of students the opportunity to combine theory and practical experience. From the materials submitted, it appears that the program comes in three pieces: (1) a required core of 13 courses, 10 of which comprise a slightly abbreviated Economics/Management major; (2) two full-time internships on the co-op model, which, in terms of the responsibilities covered (e.g. financial analysis, personnel management, marketing, etc.), fill out the Economics/Management major and require both a written analysis of the experience and a research paper; and (3) "traditional liberal arts" courses sufficient to total at least one-third of graduation requirements. But this doesn't add up; and, with the exception of a required course in Business Ethics, there is nothing that seems to relate the "Liberal Arts" to the "Professional Management." Likewise, whether a commitment of one-third of A.B. credits to the Liberal Arts is more than the norm for other pre-professional programs in the institution was not indicated.

Whatever the dysfunctions in reporting, the program is well-subscribed (105 enrollees out of a student body of 1800), and graduates (150 to date) appear to be well-employed (principally in industry), with a small percentage continuing their education (principally for the M.B.A.).

72. St. Mary College (Kansas)

If one is to judge from the materials submitted to the Commission, the B.S. in Nursing program for R.N.s at St. Mary College possesses theoretical foundations, objectives and processes that are far more "humane" than those of many a humanities department. As such, it exemplifies one approach to professional education as liberal arts.

The major goal of the program is to prepare the baccalaureate level nurse as a generalist who can utilize the critical thinking process to deal with complexities and uncertainties that exist in health care situations. "Critical thinking" is not used as a slogan here: it is explicitly defined as a series of measurable cognitive operations involving assessment, definition, approach, implementation, evaluation and revision.

The population served by this program is a familiar one to Schools of Nursing in recent years: practicing RNs who never finished a baccalaureate degree (but who must hold 55 college credits with a 2.0 GPA or better in order to be admitted), i.e. older, part-time, returning women who are simultaneously practicing professionals. This bureaucratic recitation, though, is far less important than the way the student, the environment, the subject and the profession are perceived:

> On the student: ". . .an open system who. . .adapts physically, socially, psychologically and spiritually to a constantly changing . . . environment."
>
> On the environment: "American society. . .is evolving. . .based on tradition, economic systems, governing systems and boundaries. . The nurse and the nursing profession are part of that society. . ."
>
> On the subject: "Health is. . .a dynamic state. . .It is defined as the adaptation of the individual that promotes optimal functioning. The definition of health varies over historical time, within cultures and between individuals. . ."
>
> On the profession: "Nursing functions to support the responsibility of the individual to attain and maintain health and aids the individual to achieve restoration of health. . . .Professional nursing is a practice-oriented discipline based on emerging nursing theories as well as on the biological, physical and social sciences, humanities and other liberal studies. . . ."

As to what is done to actualize all of these objectives, the details are rather thin. Nonetheless, we can make some inferences. We know that the timing and location of offerings are responsive to the needs of part-time adult working professionals. Activities in the in-service portion of the curriculum involve time management, values clarification, and assertiveness training for dealing with special health populations,

e.g. alcoholic patients, the preparation of pamphlets on breast feeding, the study of play behaviors of hospitalized children, and procedures for monitoring ICU patients, among others.

What all of this does is difficult to determine by positivistic measures; and, in fact, the program has none, though it strikes us that St. Mary has a great opportunity for more systematic assessment.

73. Providence College (R.I.)

It is often difficult to understand how baccalaureate first-professional degree programs, tacked on to a college's normal General Education requirements, represent a "reconciliation" of career and liberal arts education. One has to look within the Social Work major at Providence College to perceive a blending of academic knowledge and values with practical skills to grasp one interpretation of the "reconciliation."

The design of the social work curriculum calls for the introduction of increasingly complex material upon which the student can develop an understanding of human needs, social organization and the response of social work to society. A three-semester internship runs concurrently with course work in the junior and senior years, and a two-semester theory/practice seminar requires the student to demonstrate the ability to apply theoretical knowledge to social work practice. The major itself appears to be very solid; but the profile presented no evidence of the use of prior (on concurrent) Liberal Arts study as either subject or method.

If one accepts the premise that booklearning, coursework and theory are the essence of the Liberal Arts and that practical experience is the essence of professional training, then the claims for "reconciliation" might hold some water. Indeed, as the profile notes, "experiential learning has limitless potential to bring vitality to the range of academic disciplines," and that "the intellectual skills of analysis, synthesis and evaluation could be powerfully enhanced by appropriately conceived opportunities for application." But the premise is fragile unless worked out through instructional design and assessment. The achievements of students in the Providence College program (e.g. use and positive impact of their work on state agencies, leadership in the organizations in which they served as interns, testimony to their skills and sensitivities) are unquestioned, but there is no assessment of what the program did to enhance those successes.

74. Stockton State College (N.J.)

It is the graduate (Master's) degree in Speech Pathology and Audiology that is nationally recognized as the basic professional credential in the field. By custom and usage, though, many undergraduate Speech Pathology programs are designed principally to enable students to meet state certification requirements as school speech therapists. One can thus practice speech therapy, but not as a full professional.

Given those parameters of credentialling, college and universities have three options in structuring their programs: (a) a 5-year program

leading to the Master's (national certification); (b) a 4-year program leading to the Bachelor's degree with school certification; or (c) a 4-year pre-professional degree designed to prepare students to enter graduate programs in the field. Stockton State chose the latter primarily because it allowed a better balance between professional and Liberal Education, hence was more appropriate to the mission of the college.

However, the program laid out in the document submitted to the Commission clearly shows that 80 credits out of 120 required for graduation are demanded by the major; and of the 80, only 24 are in the traditional liberal arts disciplines (in this case, Anatomy and Physiology, Introduction to Linguistics, and three courses in psychology: intro., abnormal, and developmental). That leaves a tremendous burden for Liberal Education on a "General Studies Cluster," as it is known, a distribution formula with no ostensible guidance from the Department--at least as far as we can tell.

If one is to judge by the degree to which primary purpose is fulfilled, though, the quality of the pre-professional curriculum is high: 80% of its graduates enter graduate school within one year of receiving the B.A.

75. Tri-Colleges (Iowa)

The Tri-College B.A. program is a consortial effort of three, small, church-affiliated liberal arts colleges in Dubuque, Iowa (Clarke College, Loras College, and the University of Dubuque) to provide a degree option for part-time, working adults interested in majors in business and other career-related fields.

In order to fulfill the colleges' shared concept of education, and in light of their recognition that returning to school is part of a larger transition in the lives of adult students, the program places a very heavy emphasis on Liberal Arts. With NEH support, a re-entry seminar and three core courses were developed to introduce adult students to a humanistic way of thinking reflective of the Christian tradition of the colleges and to ways of dealing with values and perceptions of the individual in society. The re-entry seminar explores issues of change, transition and reassessment. Core courses explore "The Individual's Freedom," "Work, Leisure and the American Dream," and "Creativity and Conformity." All are designed to strengthen critical thinking, communication and listening skills, and to engage students in both the learning process and in multidisciplinary approaches to critical topics.

The profile is rather frank in acknowledging that the impact of values-related courses is difficult to assess directly; but the evidence of student response to the care with which the colleges have approached this transition experience is very positive. (ER)

76. Queen's College (North Carolina)

The Women's Leadership Program at Queen's College is a noteworthy variation on the "career add-on" approach. Instead of a co-op model and

instead of using career counseling as a student service, the college utilizes a sequenced curriculum to provide its all-female student body with clear and purposeful goal-setting and problem-solving skills, as well as the personal and formal leadership skills that are required in American business and industry. Developed with assistance from the American Management Association, the curriculum includes requirements for freshmen and sophomores and elective opportunities for juniors and seniors.

Leadership I, required of all freshmen, is offered in a three-week intensive January term, and is taught by visiting personnel from the American Management Association (a creative approach to staffing). The course uses a variety of experiential techniques in leadership, organizational dynamics, and personal development. Sophomores may meet the requirement of Leadership II by participating in either Outward Bound, a study tour, a leadership internship (under a female executive) or a career exploration course.

While the program is in its fourth year, and has involved every student in the College of Arts and Sciences, the results cannot be fully assessed. The existing evaluation is based on self-reported "perceived degree of behavior change" from a limited sample of students. Given the objectives of the program, there must be better measures.

77. University of Cincinnati

Many liberal arts students suffer intense anxiety about their employment prospects. In addition, many seek to finance their college education by combining full-time study with menial part-time work. The pressures that result decrease their ability to benefit fully from their courses, and the work experience too frequently offers little to prepare the students for later employment.

The five year Cooperative Education program in the College of Arts and Sciences at Cincinnati seeks to combine the opportunities for both liberal and career-oriented education and to assist low income students with an alternative to working and studying at the same time. While Co-op programs have existed at Cincinnati for nearly 80 years, the Arts and Sciences program was initiated only in 1976. It is currently available to majors in Communications Arts, Economics, English, French, German, and Spanish. To be admitted to the program, students must maintain a 2.5 average in their freshman and sophomore years, and be willing to accept placement during their "co-op quarters" out of state, or (in the case of foreign language majors) abroad. The only common experience is a course in Professional Development intended to acquaint students with career planning and choice, knowledge of professional communities, and work-world skills.

The credentialling aspects of this program are particularly interesting. In addition to the A.B., the student receives a "Certificate in Professional Practice," and may choose to earn credits required for other "Certificates" as well: in Business Administration, Writing, etc., but it was difficult to determine the precise criteria for such certificates. (ER)

78. University of Virginia

While the Career Opportunities Institute at the University of Virginia is designed to provide options other than university employment for Ph.D. graduates in the humanities and social sciences, there is much that baccalaureate level approaches can learn from it. The program recognizes that graduate level work demands the development and honing of skills that are highly valued in business and government settings as well as in traditional academic institutions. In particular, these skills include understanding of the complexities of research, superior communication (in speech and writing), the organization and management of time and resources, cross-cultural sensitivity, and foreign language proficiency.

The Institute is a six week summer program that provides graduate students with instruction on the problems, issues and opportunities experienced by managers in private and public organizations. It focuses on the language and management of business, organizational structures and processes, and introduces the student to functional aspects of managerial work such as accounting, finance, information systems, marketing, and organizational management. The program also includes critical components dealing with personal interest and motivation, and career awareness. It has been in operation since 1980, and has served nearly 150 participants (average age: 36) from 33 disciplines and over 50 degree-granting institutions.

The information provided to the Commission on 37 of these individuals demonstrates a wide range of subsequent job placements--all of which evidence the value of a strong training in the Liberal Arts combined with the effects of a program such as this.

Other Programs in this Category

Notre Dame University

Notre Dame seems to make frequent use of the "second major" (see # 101). The Arts and Letters Program for Administrators (ALPA) was initiated in 1981-2 to provide liberal arts students a wide range of administrative and management opportunities after graduation. Any student in the College has the option of selecting this program as a second major in conjunction with one of the 15 traditional disciplinary majors offered.

The program consists of eight courses in accounting, finance, management, marketing, economics, statistics and computers; and two electives that deal with business from a liberal arts perspective. While the college claims the program is "interdisciplinary," the prima facie evidence does not support that assertion.

As the program is new, a systematic evaluation of its effects is not yet possible; but the University Placement Bureau has taken special steps to alert students' potential future employers to the program. (ER)

University of Iowa

This is a fairly standard Cooperative Education program, but one that involves students from every college of the University, and on the graduate--as well as undergraduate--level. Started in 1976, the program was motivated, in part, by the inability of students to "translate their education into employer terminology," a lack of knowledge that "was perceived by employers as a lack of self-awareness, self-confidence and ability."

Over 400 program placements are made annually, the vast majority for students in the College of Arts and Sciences. Placements are of two types: non-credit bearing and credit bearing, the latter involving an independent study project carried out concurrently with the placement, and with the responsible department determining the number of credits to be awarded. While it is difficult to determine much else about the substance, timing, and standards of the program, the University reports that over half the students who have passed through the program to date have been offered permanent positions with their cooperative education employer.

Pace University. Like the Iowa program, Cooperative Education across the three campuses of Pace University involves a standard formula, and is of similar size (if one is to judge from the number of placements and the number of participating employers). While the material presented describes the program fully, and while the reports of survey evaluations are enlightening, there is no special focus on the Liberal Arts here (either as subject or method) nor any attempt to modify the regular Co-op processes to serve the interests of reconciliation. In fact, unlike the Iowa program, it appears that most of the students in the Pace Co-op are majoring in pre-professional or professional fields.

Albion College

Another Albion undertaking involves a structure similar to that of the Liberal Arts in Professional Management program (see #71), drawing on the resources of the Gerald Ford Institute for Public Service, and designed for students interested in careers in government. But this program bears more resemblance to an add-on honors component to a regular major (see Part E below). Students complete a regular major (usually history, economics, philosophy or political science), then add a set of 7 courses, two or which are prescribed (the other five are selected from the general fields of public policy, ethics and social thought, quantitative analysis, recent American history, and economics). In addition, students complete two off-campus internships of 15 weeks each (most of which seem to be located in Washington, D.C.). A 3.0 average is required throughout the program.

Upon graduation, students receive both a degree from the College and a certificate from the Institute. Since there have been only two graduating classes, it is difficult to evaluate program success.

PART E:

POSTSECONDARY HONORS PROGRAMS/PROGRAMS DIRECTED AT GIFTED STUDENTS

The Commission received profiles from approximately twenty (20) Honors Programs directed wholly at college students (as distinguished from those college programs operated for gifted high school students), and a small number of programs that, while not designated as "Honors," are clearly designed to serve the special needs of gifted students at the postsecondary level.

The collection of programs reflected in these profiles may represent a reasonable sample of the roughly 250 member institutions of the National Collegiate Honors Council, ranging as they do from community colleges to elite private liberal arts colleges to major state universities. The NCHC was established in 1966 as a successor to the University Committee on the Superior Student, the principal goal of which was to stimulate the creation of honors programs. The founding of NCHC was a symbolic blessing of the success of the University Committee--which is to say that honors programs in American colleges and universities are a long-established tradition. Most of the programs represented in this collection, in fact, were initiated in the late 1950s and early 1960s in the context of general concern for student achievement and academic excellence. It is hardly coincidental that this same period also witnessed a similar emphasis in the nation's schools.

If one were to judge by this sample, there seem to be a finite number of models of honors programs. These can be described on a matrix of organizational and curricular forms; and there are enough variations within this matrix for one to conclude that the concept of the honors program is well suited to the diversity of postsecondary education in America.

What are the dominant models that came to our attention?

1) The Honors Community. The honors program that stresses the creation of a small and select group of learners within an institution, a group that enters and exits as a community, tends to emphasize organization and support services over curriculum. It is the community that counts, and that community is reinforced as it moves through the institution by both academic and non-academic (e.g. residential colleges, Honors centers) means.

2) "Supply-Side" Honors. The institution that emphasizes the creation of programs from which eligible students select at different stages of their college career is engaging in an honorific form of academic marketing. It is the program--or, more likely, group of programs--that counts first. The theory is that the more (and the more various) honors programs one creates, the more one stimulates student demand and achievement.

3) The "Exponential Major" and Similar Equations. The "honors version" of a college major is the most common variant of this approach.

The coherence of program--by discipline or theme--is what counts first; and under this rubric, students are usually selected after their first year of college.

4) General Honors. Customarily, "General Honors" takes the form of an interdisciplinary General Education program, confined to the first two years of college, and with a heavy emphasis on the traditional Liberal Arts. Perhaps this is the way the Liberal Arts ought to be presented to all students, but it seems to be reserved for the few.

Both within and outside of any of these models of honors programs, such vehicles as independent study and research participation are frequently used to address the needs of gifted students. It can be argued, of course, that both those vehicles can be used to advance the achievement of other students as well; but the research participation program that involves a "mentorship," for example, seems to be extraordinarily effective for the student who has already moved beyond the rudiments of inquiry.

The most common feature of honors programs is selectivity; but our colleges and universities seem very actuarial about the selection process: cut-off scores on the SATs or ACTs, high school GPAs, etc. are the most commonly used sorting devices. Even those programs that allow a student to enter after the freshman year of college nearly always employ a GPA cut-off. Rarely are qualitative assessments used; and when they are, we find ourselves talking about "exceptions" and "waivers," not norms.

However notable their achievements in local contexts, very few honors programs described in these pages seem to have asked themselves what habits of mind characterize the superior, gifted, or unusual student. We thus may be failing to reach and challenge a great deal of talent that is not identifiable by actuarial measures.

It is partly for that reason that so many of the honors program profiles we reviewed failed to indicate precisely how it is that their students' learning improves as a result of the "honors experience." They simply have no baseline of learning other than the definition of a "good student" as one with an ACT score of 29 or a GPA of 3.25. That many measure their success in terms of the number or percentage of their honors students who go to graduate or professional school likewise indicates a paucity of self-reflection, since many of those students would probably go on to graduate or professional school irrespective of an undergraduate honors experience. The students testify to the value of this experience, so something may be happening to them. But until we know precisely what it is, we will be unable to help more students achieve the same ends.

What follows is a selection of analytical abstracts of program profiles that illustrate the models and approaches described above. Those which the staff found most intriguing are indicated by an asterisk.

79. Washington State University

A "General Honors" model, this program admitted its first students in 1960 after a few years of extensive planning. It has since played a very influential role in terms of other university honors programs established in the 1960s.

The program is a distinct academic entity of the university. With its own budget, it reimburses departments (in "teacher assistant coinage") for faculty released time to teach in the program--a common and highly leveraged variant of the released-time purchase formula. Students are invited to participate as entering frehsmen on the basis of high school grades and test scores.

The honors curriculum consists of a structured four-year pattern of honors courses and seminars, though, with the exception of Junior year courses in Western and Eastern Civilizations, it was difficult to determine the precise content of the program. Independent study is required and foreign language study encouraged (roughly ¼ of the students in the program take a foreign language). Students in certain majors are also required to complete a thesis.

This program has been regularly evaluated by students, and periodically evaluated by both internal and external review committees. It seems to function as an incubator for new programs, as a haven for innovation, and as a vehicle for faculty development. The University believes the program attracts superior students who would otherwise attend college elsewhere, but there is no hard evidence for that contention. (ER)

80. University of Utah

The University of Utah Honors Program was initially patterned after the Washington State model. Founded in 1961 with the aid of a five year Ford Foundation grant, this program was one of several offered to encourage accelerated undergraduate and graduate degree programs as a way of addressing the shortage of college teachers at that time. From its inception, however, the Utah program clearly stated its intention to focus on improvement of the quality of undergraduate education, offering gifted students at a large state university experiences analogous to those available at smaller and more selective institutions.

As in other cases, the definition of the "gifted" student is based largely on high school performance (3.3 minimum GPA) and test scores (27 on the ACT or 1150 on the combined SATs), though other students are admitted on a case-by-case basis. Approximately 1,000 students are currently enrolled in this program, representing 5.5% of those in all baccalaureate programs at Utah. While appropriate to a large state university, such numbers seem to preclude the development of a sense of community that many regard to be key to the success of honors programs. Indeed, there seems to have been little attempt to create an honors community through residential patterns of extra-curricular mechanisms.

The curriculum consists principally of general Honors courses, interdisciplinary seminars, tutorials and independent study. Eight (8) honors courses and a senior project are required for the Honors degree.

This work represents 22% of a student's baccalaureate degree requirements, though it is unclear how many of those courses simultaneously satisfy the University's liberal education requirements.

81. University of Delaware

The University of Delaware Honors Program is designed to provide a wide choice of opportunities to meet the individual academic and developmental needs of talented students. Begun in 1977 as an outgrowth of a Freshman Honors Program, it offers all students with a 3.0 GPA or better the option of interdisciplinary honors courses, apprenticeships in undergraduate research, honors sections of departmental courses, special topics in the disciplines, and honors degrees. Freshmen may participate in a full program; other may draw upon honors offerings at various times in their college careers.

There is thus no clearly defined set of students "in the Honors Program" at Delaware; and over half the students meeting the basic Grade Point requirement have taken Honors courses. The integrated Freshman Honors Program provides a useful focus, but it does not seem to be considered essential to the overall mission of an honors program in a state university. While there is flexibility for students in such an approach, one might argue that the idea of honors loses its integrity if people can drop in and out of the program. Why call it "honors"? Why not simply say, for example, that a special departmental seminar in X requires a student to have a 3.0 average, and carries an extra credit?

82. University of Nebraska/Omaha

The UN/O approach to honors programs is somewhat akin to that of the University of Delaware in that it combines the "supply side" offerings with a framework that allows students to float in and out of honors experiences. Each college of the University has an honors coordinator, and each offers a series of interdisciplinary colloquia (e.g. Ethics and Business) as the core of the honors experience. To this is added a 6 credit senior project or thesis.

But students may also contract for special Honors credit in regular courses by taking on independent research projects with faculty. Although there is no uniform requirement across the various colleges, honors students are encouraged to take a minimum of one honors course (3 or 4 credits, one assumes) for each 12 credits of non-honors courses.

There are virtues and limitations to this eclectic approach. At a large commuter campus, the variety of options for fulfilling the requirements of the honors program is very appropriate; on the other hand, the ideal of an honors community seems threatened by the inevitable atomism that results from a proliferation of options.

*83. Xavier University/Cincinnati

The Honors A.B. at Xavier University is a selective program that admits 20 entering freshmen each year to an intensive four-year liberal arts course of study. The required core of courses in this program emphasizes classical languages, literature and philosophy--with courses

in Greek and Latin sufficient to satisfy the university requirement for a major in Classics. However, most Xavier honors students complete a second major by combining program requirements and electives. The program features weekly tutorial instruction, offers a residential facility for its students, and requires a senior oral examination.

The Xavier program has been in operation since 1948, and has been modified over the years in the direction of fewer required courses than its model, the Jesuit Ratio Studiorum. The program believes that the excellence of the education it provides and the achievements of its graduates are recognizable, though, like many similar programs, has never precisely measured either.

*84. Tennessee State University/Nashville

The University Honors program at Tennessee State is a variation on the General Honors model that serves approximately 2% of the university enrollment. Founded in 1964, this is one of the oldest honors programs in Tennessee, and has provided assistance in honors program planning to a number of institutions in the southeast.

The program also incorporates elements of the "community of learners" approach through an Honors Office that provides advisement, an Honors Center, and special assistance to students applying for graduate admissions and fellowships. The academic aspects of the program involve two Honors courses per semester (though it is difficult to determine what subjects are covered or what distinguishes such courses from others--beyond class size and discussion format), plus a senior thesis or recital.

What is particularly interesting about the Tennessee State program is that it also offers a variation for nursing students in a two-year A.A. program offered by the University. We found no other institutions offering both Associate's and Bachelor's degrees that simultaneously provided students with an honors program at both levels.

85. Kearny State College/Nebraska

"Horizons," the Kearny State College honors program, was initiated in 1981 to attract gifted high school graduates, retain them, and emphasize the liberal arts component of the college curriculum. The approach is a familiar one to many former state teachers' colleges which became multipurpose institutions in the 1960s, and which have sought for ways to bring some intellectual vitality to their campuses and to challenge their faculty.

"Horizons" is a scholarship program. That is, successful applicants receive various waivers on tuition and/or room--which explains, in part, the success of the recruitment effort. As there are approximately 100 students in the program at any one time, the administration--and the state legislature--are obviously very supportive.

In terms of curricular form, the Horizons program operates on the General Honors model, but limits its courses to freshmen and sophomores.

The honors curriculum has a strong humanities bias, as indicated by course offerings such as "Ideas and Ideals in Western Civilization," "Literary Classics," and "the Philosophy of Science." While this is a young program, we found it surprising that the effort to provide an honors dimension to the undergraduate experience seemed to stop after the sophomore year, and, in fact, was confined to but a third of the student's general education requirements.

86. The University of Iowa

The Honors Program of the College of Liberal Arts at the University of Iowa dates to 1958, and is basically a coordinating framework for departmental honors activities. The individual departments supervise their own honors programs and students, and certify to the Honors Office those seniors who should be awarded honors degrees in their majors. Even when honors sections are offered in lower division general education courses, the departments run the show. The Iowa program is thus a pure model of the "exponential major" as honors.

What ties these honors majors together--in addition to the common requirement of a senior year research or thesis project--are supportive service activities, e.g. an Honors Center, an Honors Students association, special lectures, newsletters, convocations, scholarship, and a common library room with computer terminals. No systematic assessment of the program has been undertaken to date, but the growth of the program in recent years is leading to such an evaluation.

*87. The University of Colorado at Colorado Springs

The profile we received from the University of Colorado at Colorado Springs focused on one departmental honors program, that in psychology. It thus provided Commission staff with the opportunity to examine the type of microenvironment to which other profiles referred.

If there are any hints at all as to how a departmentally-based honors program may be conceived, they lie here. The UC/CC psychology honors program moves some of the structure and processes of a graduate program into the undergraduate curriculum; and that is a logical--though not terribly surprising--conception.

Through a contracted mentorship with a professor, a qualifying Junior psychology major concentrates in a sub-specialty of the discipline, e.g. animal behavior, for two years. In a very measured sequence, the student performs a general literature review, places it in the context of systems and theories in psychology, reflects on the research area within the context of the philosophy of science, develops a research proposal (with particular attention to methodology), pursues and presents the research project, and defends it before a three-person faculty review committee in the same manner as a dissertation. The Graduate Record Achievement Test in psychology is required of all honors students in their final semester.

This approach to departmental honors has considerable attractions: it is partly an extension of liberal education in that it places the

specialty and the research to be performed in a theoretical context through Honors Seminars on psychological theory and the philosophy of science; it introduces the student to both the collegiality and rigor of graduate work; and it provides a very concrete measure of student achievement against national norms.

So in addition to the evidence of student papers presented at professional society meetings, student papers published, and students going on to graduate school, the program has a very specific reference point with which to judge its success. The secondary benefits of the research mentorship include increased departmental research output and its consequent contribution to institutional advancement.

Do all the students who follow such a program go on to graduate school in psychology? No. The program candidly notes that an unintended outcome for some students is a discontent with "the objectives of professional psychology" as both discussed in honors seminars and revealed to them their their experience. But given the infusion of this program with the spirit of liberal education--critical inquiry--such an outcome should also be welcomed.

88. The William Paterson College of New Jersey

The Biopsychology Honors Program is an interdepartmentally-based undertaking directed at talented state college students who wish to pursue graduate education and who require the challenge and experience of a program at the cutting edge of science to increase their chances of success. The program was carefully negotiated over a two-year period by faculty and student representatives of two departments (Biology and Psychology) that serve overlapping constituencies--not only of their own majors, but also those from Chemistry, Anthropology, and Nursing.

The program can best be described as an add-on to existing majors that requires a group of "core foundations" courses that are also required by the majors. These foundations courses are from the standard offerings: General Psychology, 2 semesters of Biology, 4 semesters of Chemistry (2 for Nursing majors), 2 semesters of Physics, one semester of Computer Science, and either 2 semesters of Experimental Psychology (required of all Psychology majors, anyway) or a statistics course. Once a student has completed half of these courses with a 3.0 average or better, he/she can enter the Honors Program and begin taking a set of four "core biopsychology" courses: Physiological Psychology, Neuroscience, Behavior Genetics, and Topical Electives (e.g. Sociobiology, Psychopharmacology, etc.) All participating departments have agreed to eliminate redundant requirements and to allow certain courses to count toward more than one objective.

The program is ideally suited for pre-medical students, and recruitment begins with an open house reception for talented incoming freshmen and their parents. The more academic features of the honors community are maintained from the freshman year on, particularly colloquia and research participation.

There are two basic measures of program success: graduate school attendance rates (.1% for Biopsychology Honors students v. 50% for regular Biology majors v. 33% for regular Psychology majors), and student paper publication and presentations at scientific meetings.

*89. University of Alabama

The evolution of the Computer-Based Honors Program at the University of Alabama could become a classic study of institutional change driven by student achievement. The program itself is also one of the few we examined that was able to describe--at least in general terms--the characteristic modes of thought and learning behaviors of honors students. Given that ability, it is thus not surprising that the selection process for this program relies heavily on a two-day series of interviews. The gamut a student must run to be accepted into this program is the equivalent of that at highly selective private institutions. Only 20 are admitted each year, and all receive a modest scholarship.

The program grew out of the creativity and achievement of part-time student employees of the University's computer center in the 1960s. As recounted in the profile, it became clear that these students were major factors in the rapid dissemination throughout the University of computer familiarity among the faculty and staff," and that these students thus received a unique education: they were master learners.

The form of this honors program involves the student as instructor to the institution. The assumption is that if one trains a select group of students in both computer techniques and their applications to specific subject matter areas, they can subsequently be assigned to assist faculty and staff in acquiring the knowledge and techniques necessary to use the computer as a tool in research, instruction, and institutional management.

What are the characteristics of such students? Empirical research told the program designers that students who have attained a high degree of success in computer applications are those who can reason abstractly and systematically, who can work both independently and in groups, and who evidence a high degree of imagination and creativity. Not all of these capacities can be measured on standardized tests on the order of SATs or (on the other end of the undergraduate pipeline) the GREs or even by such instruments as the Omnibus Personality Inventory. Thus the two days of intake interviews.

The academic program involves not only in-depth training in four computer languages, not only self-instruction in two others, not only the history of computer applications, but also concrete computer application projects in both research and instruction. These projects are designed in the form of contracts (a fairly standard mechanism of self-paced instruction) and are generally one semester in length. While it is difficult to determine from the profile the requirements of the program in terms of credits, courses, GPAs, etc., the claims made for program success are, prima facie, very credible.

90. Syracuse University

The University Honors Program at Syracuse is a hybrid model. Each class of honors students, for example, enters and exits as a community, though the number receiving degrees with honors seems to be about 20-25% of those who enter, i.e. there is a good deal of attrition from that community. The programs are based in the colleges of the University, not in the departments; and while it is difficult to tell from the information provided, it is the college that offers honors seminars that, in combination with the senior year thesis, constitute the core of the honors experience.

Though details concerning the stuff and operation of the program were somewhat sparse in the material we received, the respondents were more frank than others in indicating the tensions that honors program structures create for many of the faculty involved. The case is a familiar one in the values of American universities: the superior teacher, committed to the education of gifted students, is discouraged by the requirements for tenure from fully pursuing that commitment.

*91. University of Georgia

Like the programs at Syracuse and the Univ. of Nebraska/Omaha, the Honors Program at the University of Georgia was originally established in the College of Arts & Sciences, but later branched out to cover other colleges within the complex organization of a large institution. What is particularly interesting about the Georgia organization, however, is that it is melded with Advanced Placement Programs and National Merit Scholars Programs, thus providing the potential for a full, articulated experience for the gifted student from the secondary through the postsecondary level.

Testing is an important aspect of the selection process for this program. Georgia is one of only three (3) states that currently requires proficiency examinations as part of the credentialling process for college students, and the so-called "Regents' Testing Program," focusing on language skills, has been in place for a decade. Given that tradition, it is not surprising that the University of Georgia offers Advanced Placement tests to incoming freshmen during summer orientation, and that scores on such tests can quality a student for the Honors Program who may not have qualified on the basis of SATs and high school GPAs.

The 90 courses regularly offered by the Honors Program include accelerated sequences in lower division courses in the disciplines, e.g. a natural science sequence for nonscience majors that integrates physics, chemistry, geology and biology and that seeks mastery not only of basic concepts and methods but also the cultural and social aspects of science. Some of the upper division honors courses are simply seminar version of major requirements, while others are designed for interdisciplinary integration and appeal to students from different degree programs.

The Georgia program also offers the framework for an "area studies major" in which Honors students design interdisciplinary programs of study within approved guidelines; for challenge credit-by-examination; for participation in graduate courses; and for a combined B.A./M.A. degree.

The program maintains a good deal of data on its students (10% of each entering class) and its alumnae, and regularly compares profiles--on specific tests or postgraduate education/employment--of its students with other University graduates. Given the widespread use of tests at Georgia, most of the elements are in place to perform a systematic evaluation of the impact of the Honors Program, and one would trust that that evaluation will be soon in coming.

92. Edinboro State College

As a fairly recent (initiated in 1977) program--and one that is still evolving--the Program of Honors Studies at Edinboro State can provide helpful guidance to potential honors programs at other similar institutions. The first version of the program required honors students to undertake honors studies in every division of the College, a requirement that hindered more than advanced student performance. Even after this requirement was modified, the program presents an eclectic mix of vehicles: separate honors classes, contracts for students to earn honors credit in regular classes, and independent study. Translated into credit hours, the program requires 21 credits in these various honors modes out of the 128 for the Bachelor's degree. There is not much of a centralized administration for Honors Studies, and not the kind of independent support budgets and facilities that some other institutions enjoy; but the overload time commitments of faculty and administrators to work with students are notable.

*93. Swarthmore College

What does the notion of an honors program mean in the context of an elite liberal arts college? After all, one could say that the vast majority of the students enrolled are "honors students" to begin with, and that the avowed purpose of the entire institution is to capitalize on the motivated, self-directed learner who tends to gravitate to a demanding undergraduate program.

The Honors Program has been in existence at Swarthmore since 1922. It was--and in large part, remains--a conscious imitation of the system of "reading" and external examination of British universities. One third of the student body is involved in the program, which concentrates study on a limited number of subjects in the junior and senior years. The student takes only two courses per semester during that time (thus allowing for broader, deeper and more measured learning), and is examined in six subjects at the end of the senior year, with the normal distribution of subjects being four in the student's major and two in allied fields.

What should be particularly interesting to the American reader is the way in which the British external examination system has been adapted.

At the end of the junior year, Swarthmore honors students take preliminary examinations--or "trial papers," as they are called--in their six fields. These papers are read by Swarthmore faculty, and serve as a sorting mechanism, i.e. based on the results, some students are advised out of the program. The senior year examinations for those students who remain are written and graded wholly by external readers, who also come to the campus to conduct an oral examination of each student, and in whose sole authority rests the determination of awarding the degree with Honors. Some might argue that this is an expensive system, but given other opportunity costs, it may be more efficient than it appears.

By virtue of institutional policy, Swarthmore does not compare the achievement of Honors Program students with those in the regular programs, and thus, by strictly empirical criteria, data on the comparative impact of this program do not exist. But the issue may be moot, as Swarthmore emphasizes that "to be an Honors candidate" in what is essentially an honors institution "is not in itself an honor, but a special kind of opportunity."

94. John C. Calhoun Community College (Alabama)

Honors programs in community colleges can be perceived in a number of ways; and the approach at John C. Calhoun can best be described as a tracking system leading to transfer. Data from both the National Longitudinal Survey and High School and Beyond--as well as from other studies--clearly demonstrates that a growing number of talented secondary school students are choosing to attend community colleges. Calhoun is extraordinarily flexible about the ways in which these students are identified, though the specifics of courses and other aspects of the academic program were not spelled out in the material we received. The model, though, is that of the General Honors program, as indeed it must be in a two-year college setting. It uses honors sections of core curriculum courses, honors credit in regular classes, and special interdisciplinary seminars; and requires independent study, research, and scholarly writing of all students.

In a large community college setting, a program such as this has the potential to guarantee transfer into four-year institutions for those students who seek it after the Associate's degree. But in light of the need to revitalize and expand the transfer function of community colleges for larger numbers of students, honors programs can have "filtering effects" on the rest of the institution. So such efforts as those at John C. Calhoun need to be encouraged.

95. Tidewater Community College (Virginia)

The Honors Curriculum at Tidewater Community College is a two-year college version of the "exponential major" model. While comparatively new (1979), the program offers a manageable and clear approach using existing curricula. That approach allows a program to establish its organizational niche in an institution fairly swiftly. Thus, the program is not a separate curriculum, rather operates through honors sections of the General Education component of the two-year degree.

Three courses were created by the Division of Humanities and Social Sciences to complement this approach--World Literature, History of Civilization, and Interdisciplinary Principles of the Humanities--while simultaneously serving to satisfy degree requirements.

As in the case of the John C. Calhoun program, student selection is based on a variety of factors, though here it includes an interview "in which members of the honors committee look for intellectual curiosity and general academic potential for excellence." While the number of students in the program is very small (20 out of an enrollment of 4500), their subsequent success, principally in four-year colleges, has been marked.

96. Loyola University of Chicago

In the course of its nearly 50 years of existence, the Honors Program at Loyola has passed through virtually every conceivable form--including some that our initial taxonomy fails to account for. Originally (1936) an exponential major model operating principally through honors sections of regular courses, the program experimented with a learning contract model in the 1970s. That is, honors students designed their own program of studies, were exempt from parts of the Core Curriculum, and basically followed a path of tutorials and reading courses. By the middle of the decade, a dual program was created, distinguishing between Departmental Honors and University Honors. While University Honors seems to receive the primary emphasis, it was very difficult to determine from the profile precisely what would be studied in "University Honors." Though we have little information on academic content, we have much information on its vehicles: honors credits in regular courses (via contract), honors courses that emphasize the methodology of the disciplines, honors research (a variation on the learning contract), and honors credit for graduate courses. The idea of the honors community is also established early in the program through a Freshman "honors retreat."

The measure of impact used by Loyola is graduate or professional school attendance: 86% of the honors students v. 28% for the college as a whole. Whether that result exceeds the expectations one would normally have for students admitted to such a program, though, remains an unanswered question.

97. Indiana University of Pennsylvania

The Program for Scholars was created in 1978 to encourage highly able Black students to take on the challenge of exceptional learning beyond the conventional classroom, and hence provide role models in education both on the campus and in the State. Its longer range goal is to increase the numbers of Black scholars who will obtain graduate and professional degrees.

Essentially this is an "honors community" model. Scholars spend 10-20 hours weekly in a multi-purpose common room for student, informal instruction, preparation of outreach activities to Pennsylvania high schools, reading assigned by program staff, and seminars with guest

lecturers. A small number of students (18) participate, and each receives a stipend. (ER)

98. Utah State University

The "Space Science Students Program" utilizes the NASA Small Self-Contained Payload program to provide a unique--but comparatively isolated--hands-on learning experience for gifted science and engineering students who are identified and selected while in high school.

The NASA program allows individuals to purchase a container to be sent into space and returned to the user after flight. Such a container was purchased and donated to Utah State, which subsequently devised a program for high school seniors to propose experimental uses of the container. Those whose proposals are accepted are awarded 4-year tution scholarships plus $500 annual research fund stipends.

While at the University, students must maintain a 3.5 cumulative average and meet all requirements for their majors. The preparation for the flight of the container is the only "honors experience," though it is a highly demanding one. Students are responsible not only for the physics, computer logic, mock-ups, and flight models, but also for NASA safety analyses and paperwork (providing them with a fine introduction to the bureaucracy of research). The first flight occurred on the U.S. Columbia in the summer of 1982.

The program has yet to be formally evaluated; but it is not surprising that all its early graduates have been very successful in their search for jobs in science fields. (ER)

99. Massachusetts Institute of Technology

The Undergraduate Research Opportunities Program (UROP) at MIT is not an honors program per se as much as it is an exemplary mode of challenging highly gifted students. Starting as freshmen, three out of four MIT undergraduates elect to be teamed as junior research colleagues with two thirds of the faculty, and hence can move rather swiftly to the frontiers of knowledge. Far more programs than imagined by its founders have been modelled after UROP--and in far less elite institutions. But the scale and intensity of this program are best suited to research universities of modest size.

The program began as an academic initiative by the Administration, with "a climate of benign collusion in many MIT offices and departments." Each department has a coordinator in the program, and the network of coordinators, cutting across the complex orgnization of the university, is able to break conventional rules and bureaucratic procedures that are critical to the evolution of such an undertaking.

How does one describe UROP accurately? There are features of a co-op program about it, since many participating students receive stipends for research participation during both the academic year (up to 20 hours per week) and summer. Much of the research work is also credit-bearing.

But there the resemblance ends. All research participation is established by student proposals (whether the research is the student's own idea or an on-going project of a faculty member). When pay is involved, the proposal is far more than a letter of intent (analogous to a learning contract): it is very much like a grant proposal. No matter what is set out in the original proposal, though, at the end of the project, the student writes an evaluation of both the research experience and the faculty member as supervisor.

How does one judge the success of a program such as this? MIT uses a number of indicators. First, by the thorough institutionalization of the program among the faculty, for whom it is a spur to professional development, a greenhouse for risky research ventures, and (for junior faculty in particular) an efficient mechanism for building research teams that are often the key to success in science. Second, through the same kind of evidence of research success that would be used to evaluate faculty, i.e. student research papers either published and/or delivered at scientific meetings. And lastly, by faculty, graduate school and employer responses, over time, to the improved quality of undergraduate research; and by student assessment of UROP as "the most significant contribution" to their undergraduate education.

100. Inter American University of Puerto Rico

The Honors Program at the Inter American University grew out of the realization of faculty that in attempting to be all things to all students, a comprehensive institution tends to slight the gifted. The prospects of creating such a program also provided the faculty with the opportunity (or productive excuse, if you will) to overcome the traditional barriers between the disciplines.

Initiated in 1981 (after some years of planning), the program combines honors sections of core requirements with a series of interdisciplinary seminars on topics such as "The Dimensions of Power," "Time and Space," and "Authority and Intimidation." Students enter the program in their sophomore year, and are selected on the basis of a 3.4 GPA and "evidence of special talent in relation to critical vision, service and leadership, and creativity," evidence provided through letters of reference and interviews.

A summer retreat is evidently part of the program, as it a requirement that honors students serve as tutors to the less gifted. A standard thesis requirement, including a methodology course, rounds out the program.

There is much promise here, as manifest in the self-consciousness of the program's directors. On an urbanized and large campus, "often beset by problems in communication," an honors program can, indeed, "furnish" students with a productive identity.

* * * *

Other Honors Programs

The Commission also received profiles from a number of honors programs which either were initiated too recently to determine much about their effects or were just emerging from the planning phase. These included:

- University of Kansas. The University Scholars Program, established in 1982, for 20 students per year. The program involves a "Map of Knowledge" course, mentor/student relationships with distinguished faculty, and a modest stipend.

- Notre Dame College of Ohio. "Awareness for the 21st Century" is an honors seminar for the top 25 entering freshmen. It is not a program per se, rather a serious attempt to reach the gifted entering student who is likely to become disenchanted with higher education if not challenged early in the process. The course was first offered in 1981-1982.

- Catholic Univ. of Puerto Rico. This program began in the 1982-1983 academic year, following a detailed plan that covers superior students through all four years of college, focuses on the student's major, involves students in contributing roles, allows acceleration, and features a seminar on leadership.

- Hunter College/CUNY (New York)

  Most postsecondary programs that seek to involve minority students in biomedical and other sciences are directed at potentially interested high school students (see Part A.2 above). The Minority Access to Research Careers program (MARC) at Hunter College provides additional encouragement to those minority students who have both persisted in their scientific interests and proven themselves as honors candidates during the first two college years.

  The program provides an extended research experience for these students during their junior and senior years of college, a research assistant's salary, and a tuition waiver.

PART F:

SCIENTIFIC AND TECHNOLOGICAL LITERACY FOR THE NON-SCIENCE MAJOR

The track structure of postsecondary science education has never been disputed. Depending on the size and complexity of the institution, there are 3-5 science tracks in baccalaureate degree-granting colleges:

(1) A "track" for majors in non-scientific fields, e.g. humanities, social sciences, business, education (though in the last of these cases, certification requirements for future science teachers may take the student beyond the standard pattern). The term, "track," is probably inaccurate, since students in these fields tend to take introductory science sources for the sake of fulfilling General Education requirements, and do so largely within a distribution scheme.
(2) A "track" for pre-medical/dental/veterinary students. Again, "special core" would be a more accurate label than "track" for the collection of courses (2 of Calculus, 4 of Chemistry, 2 of Physics, and 4 of Biology) that these students normally take.
(3) A "track" for science majors, which generally requires the student to take coordinate courses in allied science departments and mathematics.
(4) Tracks for pre-professional degree candidates in health professions fields such as nursing and allied health. Oftimes, special sections of standard courses, e.g. Biochemistry, are required of these students.
(5) Tracks or "co-requisites" for students in pre-professional programs in fields such as engineering and architecture.

Our interest was in the first of these "tracks," on which sit a majority of undergraduates. Prevailing folk wisdom says that these students are usually fed watered down versions of the basic laboratory science courses, courses that do little to advance on secondary school curricula in Biology, Chemistry, and Physics. At the same time, the scattered evidence suggests that these students take no more college science than is required and few courses that broaden their ability to make informed decisions as citizens concerning issues requiring scientific knowledge.

When one asks colleges and universities about special efforts vis-a-vis scientific and technological literacy for non-science and engineering students, most of the responses fall in two categories: "Computer Literacy" and Science, Technology and Society (STS) programs. Whether we've outgrown the "Physics for Poets" courses that once flourished is impossible to tell from the materials submitted to the Commission. But as one observer of that issue noted, "all students who take college physics--science and non-science majors alike--ought to reach the state of reflection on the metaphorical nature of the subject matter, and understand why metaphor is necessary to discovery in physics."

Based on the materials we received, one cannot make such leaps of understanding; but a number of the programs described below seek to address science for the non-science student in terms of the abstract thought and modelling that distinguishes "higher" from "lower" order science. In other words, science is here used for purposes of cognitive development, and for addressing the low theoretical

orientation of typical entering freshmen that has been thoroughly documented in the literature.

101. University of Notre Dame (Indiana)

The "Computer Applications Second Major for Arts and Letters Students" was introduced in response to the concern of faculty that students were unfamiliar with the potential of computer technology for a wide range of human problem solving and in response to the concern of graduating Arts and Letters students that they had few marketable skills.

Students in this program are not trained to be computer scientists, but are prepared to serve as intermediaries between computer scientists and upper levels of management in both private and public sector enterprises. To that end, students are provided with a basic understanding of at least three widely used computer languages, with experience in applying this knowledge to actual research and organizational problems, and with an understanding of ethical issues raised by the advent of computer-related technologies.

The Computer Applications Second Major is thus designed for students with a primary major in one of the traditional Arts and Letters disciplines. Program requirements include 9 credits of programming languages, 3 of philosophy, 3 of statistical literacy and application, and 9 of project-oriented applications courses, often of a tutorial nature (and in which the student is encouraged to pursue applications that enhance the primary major).

Approximately 110 undergraduates are enrolled in the program. Surveys of the first two graduating classes indicated that all students received more than one job offer and started at higher salaries than other Arts and Letters majors. A significant percentage of graduates also reported that the education provided by the second major was an essential component of their work. (ER)

102. Wheaton College (Mass.)

The Computer Literacy Project at Wheaton is based on the belief that computing experience must be integrated within the liberal arts education of all students rather than added to an otherwise static curriculum. More significantly, the Project recognizes that this goal cannot be met until a majority of college faculty, convinced that the computer can serve them, become enthusiastic role models. Hence this project has emphasized turning the entire faculty into computer users and enthusiasts. Faculty development opportunities have been offered each summer since 1978, and 31 faculty members from a wide range of disciplines have been supported in individual or group projects designed to involve students in computer use within courses taught by those faculty.

Additionally, 35 faculty have attended unpaid text-editing workshops, and 8 have attended an informal course in PASCAL taught by a colleague prepared within the Project. There are now 24 academic computer terminals on campus (up from 2 in 1978, when the project began).

Student computer use has increased in line with expectations from this "filtering" approach: 700 students (out of 1200) now use computing, and more than 80% of graduates have been enrolled in a course which required computer work. Not surprisingly, the faculty has now recommended a liberal arts Computer Studies Minor much like the Notre Dame second major described above.

Key elements in the success of the Wheaton effort included the guidance and support of the administration, faculty participation, with incentives to "risk" computer learning, an NSF CAUSE grant that supported the hiring of professional staff, and a user-friendly computer center whose director is particularly sensitive to new computer students. (ER)

103. Wesleyan University (Conn.)

The Science and Society Program at Wesleyan is a cross-disciplinary, problem-oriented undergraduate major, designed for students interested in interactions between scientific knowledge and social issues. The program is largely self-constructed and demands a senior thesis.

SiSP has been in operation since 1975. It offers a sequenced core of required colloquia covering topics in the history and philosophy of science, case studies in policy and planning as applied science, science as a social institution and current issues. Majors complete other required courses from a list of university offerings, and additional programmatic electives, selected with the aid of their advisor. The minimum requirements also include two semesters of a natural science and one of math, though the material submitted did not indicate how far SiSP students exceed these rather standard minimums.

A distinguishing feature of the program are sets of comprehensive oral and written examinations by external examiners (also see #93 above) in both the junior and senior year. In the junior year, students are tested on their comprehension and integration of course work; in the senior year, the examinations focus on the student's thesis and its relationship to broader issues. These examinations also serve as a source of program evaluation, a wise use of the procedure.

Since establishment as a regular part of the Wesleyan curriculum (after a five year probationary period during which it was supported by soft money), the program has measured its success, in part, by a constant growth rate in student enrollment. While there continues to be a significant erosion during the progress of each class to its senior year, the program directors attribute that to students' need for a more structured major rather than to dissatisfaction with the program as offered. SiSP graduates perform above the norm at Wesleyan in their receipt of Honors and High Honors; and the limited follow-up information available indicates that almost all graduates are working in jobs related to their training or preparing for careers in the general area of science and society. Program faculty, who offered the Commission a candid and very engaging assessment, believe that they are demonstrating that the liberally educated person is most likely to be able to respond imaginatively and constructively to the major issues of our times. (ER)

104. Bowling Green State Univ. (Ohio)

"Approaches to Value in Technological Culture" is a course that is now ensconced in the General Education curriculum at Bowling Green State. It is offered through the Humanities Cluster College, a residence hall based program. The residential environment allows it to be delivered as a double-course, meeting 5 days per week for eleven weeks, and thus providing an opportunity for concentrated exploration of some very basic questions concerning technological society. This cluster course does not presume any scientific knowledge, though a goodly percentage of its students are principally freshmen from the professional colleges, including the School of Technology.

The course lives within its conceptual and disciplinary limits, which is to say that it deal with accessible knowledge subject to humanistic inquiry. Questions concerning the nature of technology and the ways in which it has been both affirmed and opposed in the history of culture serve as organizing frameworks. A heavy reading list, augmented by films (e.g. "Modern Times"), guest speakers (e.g. on a topic such as Technology in Modern Music), field trips and exercises (e.g. survival design) expose students to a wide range of attitudes, responses and resolutions of the enduring opposition of technological progress and the pastoral ideal. The course is team-taught and restricted to a "manageable" group of 25-50 students. Needless to say, the course is also an effective vehicle for faculty development.

Impact is assessed through the ACT/COMP examination. While it is difficult to measure the impact of one course through the COMP exam, and while there was no pre-testing, students score significantly higher on the "Using Science" section of the exam than on other sections.

105. Lehigh University

The Science, Technology and Society program at Lehigh was established in the early 1970s within the Humanities programs and with a particular focus on technology--in fact, very much like the focus of the Bowling Green State course. But this program has since expanded to include the perspectives of the social sciences and the objects of science as well as technology.

Like many similar undertakings, STS is an autonomous program cutting across the whole undergraduate college and presenting its students with the option of a minor in "Technology and Human Values." Beyond two interdisciplinary core courses, the academic offerings are determined by faculty convictions and interests, with the home department being credited with the SCHs generated (a key to departmental support for non-departmentally based programs).

The result is a very wide range of courses (over 50, and including such titles as the Politics of Science, Technology Assessment, Electronic Music, Science Fiction, and Medical Ethics), reflecting a healthy eclecticism and the conviction of program administrators that the diversity of subjects and approaches "is not a problem as long as they are perceived and portrayed as part of a larger picture." At the same

time, though, the program has consciously chosen to emphasize historical perspectives and offers several survey courses in the histories of science, technology and medicine. A package of engineering-oriented courses for liberal arts students is being prepared in such a way as to stress the qualitative aspects of the subject matter.

With such an extent of offerings, it is not surprising that almost all Lehigh students take at least one STS course. In light of a modest program objective to provide students "with at least some greater understanding of science and technology and their social context than they might otherwise have," such a coverage may provide results--though there has been no effort to assess who learns what.

106. University of California at Irvine

This program comes without a title but with a potentially high-impact product: a set of computer-based learning modules to develop scientific literacy in the general public and for use principally in non-school settings (e.g. library, home). The questions addressed by the modules are both sweeping and essential to an understanding of science: how is a scientific theory developed? what are the empirical bases of science? what is the role of prediction in science? how are scientific theories verified, modified and judged?

The software assumes no previous subject matter or computer experience; and while the modules were first used in public libraries, they have since been tested in schools, community colleges and universities. At the computer terminal, the student is required to behave like a scientist, working through real and imaginary situations in order to gather information, develop hypotheses, make predictions, verify predictions, modify hypotheses, and discover scientific laws. No instructors are required.

It is very difficult to assess the success of a program such as this because there is no instrument, at present, that thoroughly tests students' knowledge of the nature of science. But as such software becomes more widely distributed and used, someone will have to ask the though questions and develop an adequate evaluation instrument.

107. SUNY at Cortland

The Learning Cycle Laboratory for General Chemistry was developed as much for non-science students as science students, as it recognizes that entering college freshmen--no matter what their academic and career objectives--have not attained the high level of cognitive development at which one is fluent in abstractions and theory. The learning cycle approach, involving exploration, discovery and application seems to hold promise for increasing student comprehension of the most abstract concepts in chemistry.

It is thus the laboratory that is used to address the development of formal reasoning skills instead of the more common approach of covering the theory and reasoning in the lecture sessions of a General Chemistry course and leaving students only to memorize manipulative techniques for

the lab and to compile half-digested data without any notion of its relationship to theory. The program is also wise is confronting the fact that faculty who teach science labs (and in larger universities, that often means graduate students) "have had very little training in learning theory . . . and have difficulty presenting course material so that students at a concrete operational level of intellectual development can understand it." Thus, participating faculty first take a workshop on the "Development of Reasoning Skills in College Students," one following the same Piagetian approach as that used in Project SOAR (see # 28) and Project COMPAS (see # 41).

Each of 20 laboratory experiments follows the learning cycle model. The experiments themselves involve some fairly standard topics in General Chemistry such as molecular weights, chemical bonding, equilibrium, and complex ions. From the material presented, though, it was difficult to determine much more about what is actually done in a learning cycle approach to such topics and whether students reach the desired stage of comprehending the theories involved.

108. South Oklahoma City Junior College

A calculus-based physics course in a community college sounds rare enough; and while it may produce students who go on to study science in four year institutions, the approach of this competency-based CAI project presented to the Commission is designed more "to tutor problem solving . . . than teach physics concepts."

In such a calculus-based course, over 40 separate objectives requiring the application of physical concepts and mathematical rules must be completed without error. Recycling, an integral part of a competency-based system, consists of tutoring and retesting students on missed objectives. While this method is intended to insure that students acquire necessary knowledge and skills, it leaves the instructor little time to help individual students.

The goal of the project was to develop 50 tutorial lessons for students who were experiencing difficulty with specific types of problems. Each program, requiring about 30 minutes of student time after classroom instruction, concentrates on establishing a method of problem solving, the identification of known and unknown variables, and areas in which student errors are common. Microcomputers are available in an open physics laboratory, allowing for assistance even when the instructor is not present.

The profile contains a very frank assessment of the difficulties and successes of developing software for a tutorial of this type, e.g. "while the programs still require student input and decision-making, less than desired sophistication in computer response was incorporated." The complete set of 42 programs covers classical mechanics, thermodynamics, electricity and magnetism, optics and graphing data. The actual operation of the tutorial lab requires para-professional personnel to maintain materials and assist students with the operation of the computer.

Since the tutorial programs have tests built into them, evaluation is ready-made. Pre/post comparisons demonstrated that the average number of assessments which had to be repeated by students completing the course dropped 20%-- a change attributed, in part, to the increased time-on-task required by the CAI tutorial. The drop-out rate in the course has also shrunk considerably: from over 30% to 18% in two years.

The software for tutoring classical physics so painstakingly developed here have been widely distributed at no cost, and both the college and the instructor are to be commended for their dissemination efforts.

PART G:

TEACHER EDUCATION: SELECTION AND TRAINING IN THE DISCIPLINES

Given the testimony and findings of the Commission's hearing on "Teaching and Teacher Education" at Atlanta in May of 1982, the Commissioners were particularly interested in efforts to improve pre-service teacher education in two very specific areas:

1) increasing the subject-matter content (i.e. traditional disciplines) of the undergraduate teacher education program;

and

2) recruitment and selection of higher quality undergraduate teacher education students.

The first of these interests was occasioned by frequent observations that problems in teacher quality, particularly in middle and secondary schools, had more to do with the teacher's grasp of subject matter than pedagogical "methods." No doubt the issue could be debated--and was. And no doubt a large part of the answer to the content side of the equation lies in increasing and/or otherwise improving the Liberal Education and disciplinary course requirements for all undergraduate students in all colleges, regardless of major or career intentions.

The second interest was stimulated by data demonstrating that undergraduate teacher education majors ranked consistently near the bottom of the scale in terms of entering SAT and ACT scores and that graduating teacher education majors also performed poorly on the Graduate Record Examinations. The theory behind enhanced efforts to recruit talented college students to careers in teaching and to increase standards of selection is that those are two key steps in the process of professionalizing the teaching workforce.

It was not surprising that only two of the ten profiles received on teacher education focused at all on the subject-matter content question, unless one includes the few who misconstrued what "subject-matter content" means, and presented programs with heavy components of content/methods courses, e.g. "teaching social studies."

The principal emphasis of most of the profiles received, then, was on the selection issue. Of that one might make an observation analogous to our analysis of honors programs: enhancing selection criteria results in a Hawthorne effect on participants and a filtering effect on programs and organizational units. While purposeful reductions in enrollment that result from more rigorous selection processes do not always attract students to teacher education, the more teacher education programs behave in the manner of pre-professional programs, the better the quality of the entering student--in time. That in itself, of course, does not guarantee that the better college student eventually winds up in the elementary or secondary school classroom and persists in a teaching career. Nor does it guarantee better performance from the ultimate beneficiaries--our elementary and secondary school students.

109. Millersville State College (Pa.)

Teacher educators are regularly concerned with providing realistic educational situations in which students can determine if teaching is an appropriate occupational choice. That often means offering opportunities for potential teachers to examine and experience various teaching settings and techniques, and to develop positive attitudes toward both children and themselves. The traditional delay in the student-teaching experience until the senior year of college has long been the target of criticism and debate.

The Cadet Teaching program in Music Education at Millersville State College immerses all students in practical in-school activities prior to their student teaching. Cadet orientation, observation and active participation experiences include all areas of the complete music program from Kindergarten through 12th grade. Gradual involvement of the music education major culminates in the actual teaching of children in cooperating public and parochial schools. Since both college methods faculty and school teachers are always present at classes, lessons and rehearsals, cadet teachers are constantly evaluated. Careful scheduling of blocks of time in students' and faculty schedules within the calendars of cooperating schools and arrangements for transportation are administrative requisites for the operation of such a program.

Millersville faculty are satisfied that the program is improving teacher preparation and selection; and the program has also been positively regarded by external evaluators. Among the additional and unanticipated benefits are opportunities for students to work with minority children and for the college to provide a genuine service to area public and parochial schools. (ER)

110. Chadron State College (Neb.)

During the 1978-9 academic year, officials from Chadron State College and the public school systems of Chadron, Alliance and Scottsbluff, Nebraska entered into a cooperative agreement to prepare undergraduate students for teaching. This consortium agreement was premised on the assumption that teacher training can be strengthened by including practicing professional educators to supplement various phases of pre-student-teaching instruction.

By providing a modest monetary reward to selected public school educators, the Professional Educators Honorarium program permits them to interact with prospective student teachers on key educational issues and topics during the eight weeks prior to actual student teaching assignments. Lectures, discussions and workshops run by local educators address topics such as working with the principal; working with the counselor; surviving the first year; interviewing for a position; identifying student health problems; teaching in the multicultural classroom; mainstreaming the handicapped; and integrating career education.

On-going evaluation focuses on the structure and effectiveness of these "honorarium sessions" to ensure that they supplement rather than duplicate previous instruction. Since the behavioral objectives for each program include long-range statements of expected outcomes, feedback from school personnel and students is solicited in follow-up studies. These have indicated that both groups are satisfied with graduates' ability to interview for positions and deal with first-year on-the-job problems, yet felt that enhanced preparation in multicultural instruction and mainstreaming was necessary. To date, over 500 pre-service students have benefitted from the program, which both depends upon and strengthens college/school cooperation. (ER)

111. University of Louisville

To upgrade the quality of teaching in Louisville area schools through the preparation of teachers, the School of Education at the University of Louisville moved in the early 1970s both to revise its course structure and to implement a more rigorous screening process for student admissions.

Students accepted at the University must complete 60 credit hours of general education requirements in the College or Arts and Sciences before they can even apply for admission to the Teacher Education program. Their reading, writing, and computational skills are assessed through standardized tests, and their speech and hearing abilities are also tested. Candidates for admission to the Teacher Education program must also present an ACT score of 22 (vs. a national mean of 18), maintain a 2.5 GPA through their first two years of college, provide written references, and successfully complete specific courses in English, Speech and a "hands on/eyes on" Introduction to Education--all with honor grades.

After interviews and acceptance into the program, Teacher Education students pass through three "program phases," each of which involves successive admissions/screening criteria. In the first of these, students enroll in courses on the teaching of math, language arts and children's literature, and supportive courses in human growth and development and foundations of elementary education. As Teacher Associates, students in this phase of the program assist in diverse school settings two day a week. At the completion of this phase, student apply for admission to the senior level School of Education. Expansion of previous program content includes courses in the teaching of reading, social studies and science, and expanded responsibilities as Teacher Associates. After acceptance into the final phase of the program, students participate in both Cadet and Student teaching, accompanied by a practicum seminar.

What is notable about the program is the emphasis on successive stages of screening, an emphasis which has been picked up by the Kentucky State Department of Education--at least to the extent of establishing minimum standards for teachers in communications and computational skills. (ER)

112. Princeton University

It is not surprising that the Teacher Preparation Program at Princeton, a highly selective liberal arts university, emphasizes subject matter over method. Indeed, the goals of the program stress "knowledge" and "understanding" not only of a major discipline but also of what many teacher-educators would call the "foundations of education," i.e. human development, intercultural relations, and secondary school-methods. In operation since 1967, the program is small (approximately 15 graduates per year) and highly individualized.

The recruitment process begins in the Freshman year, with interested students pursued with regularity. Selection occurs in the spring; and the process requires both a personal statement and letter of reference in addition to a review of academic records. There is no question that such a screening process helps attract students who would otherwise be under peer pressure to pursue other programs.

The subject-matter portion of the student's preparation is designed to coincide with a traditional academic major that is also taught in secondary schools, e.g. history, English, mathematics, chemistry. In addition, the students are assigned to periods of observation in schools during their junior year, take a short-term course in the "Teaching of Reading in the Content Areas," take a methods course taught by a master teacher from a nearby secondary school, and do their practice teaching in the senior year.

The program is fairly simple and straightforward within the context of a liberal arts university. But its transferrability may be limited by the comparative flexibility of state Departments of Education, which have to grant individualization of curriculum a special status in terms of certification requirements.

113. University of Dayton

The university of Dayton has been combining a strong emphasis on subject-matter preparation with a rigorous selection process for undergraduate teacher education majors for 18 years. Consciously grounded in the perennialist tradition and emphasizing a common Liberal Arts core based on the quadrivium (synoptics, symbolics, aesthetics and empirics), the Dayton program demands 51-60 credit hours in a subject-matter field, 600 hours of practicum experiences spread over the four college years, and tested competence in human relations, the teaching of reading, and the diagnosis (and prescription) of learning difficulties. All of these requirements exceed those for state certification.

From the time of a required visit to the campus and interview during the senior year of high school through graduation from college, the program demands high academic performance, and documents its effects through frequent evaluations using both local and national control groups and standardized measures. There is no question that the program regards competence in the subject taught to be more important than methods.

Does it work? Graduates consistently score above the national average on the National Teacher Examination and the placement rate for 15 years has been 90% or better (versus a national average of 50%). The selection criteria have limited enrollment in Teacher Education to 500 students out of nearly 11,000 and have enabled the student/faculty ratio to hold at 14/1--a very critical ratio for quality supervision of practicum work.

114. University of Oregon

A new program to train prospective elementary school teachers to deal with mainstreaming all kinds of special populations--from handicapped to gifted--was designed and implemented at the University of Oregon in 1978. The introduction of this program was accompanied by an enhanced and systematic screening procedure, tighter retention standards, and a purposeful reduction in pre-service teacher education enrollments.

A variety of instruments and procedures are used in the screening process. All applicants are required to score at the 70th percentile or above on the California Achievement Tests, Level 19, in reading, language and mathematics (a trial determined these tests to be more reliable for the college student population than others). A writing examination is administered separately, is read by two readers, and is evaluated on grammar, usage, spelling and organization.

This series of examinations accompanies an elaborate application consisting of transcripts and references, demonstrable prior quasi-teaching activities such as tutoring or camp counseling, a statement of goals and interests in education, demonstrable prior activities in settings requiring positive relationship with persons of different backgrounds, and evaluation of a pre-practicum experience during the freshman or sophomore year. In addition, all applicants are interviewed by two faculty members and evaluated according to a standard format and interview rating check-list.

Students who meet acceptable levels on all these criteria are accorded "conditional admission" to the program. Full admission is awarded only after the student is evaluated on his/her performance in three program courses and a 10 week practicum. These stages of admission are analogous to the successive screening procedures used at the University of Louisville.

The program employs very elaborate statistical evaluations involving various internal control groups. There is no question that Oregon has thus established a good data base and a solid system of tracking student progress through the program and into the first job.

115. University of West Florida

The Field-Based Certification Program in Early Childhood Education is an in-service program, and hence falls outside our principal interests in this particular search. It is nonetheless notable, as many teachers of younger children enter their positions in early childhood education from an undergraduate specialty in elementary education which did not include

study and training specific to pre-school populations.

The Florida Panhandle Early Childhood Education Consortium is the mechanism for collaboration in this field among local colleges and universities, teacher centers and school districts, and has developed this program for teachers currently holding elementary certification who wish to add early childhood certification.

Objectives for the individual learner in this program are expressed in operative competency statements drawn from multiple sources, but principally reflecting the Child Development Associate listing. The program employs a student-portfolio strategy, in which data, analysis and assessments become both process and product. Partly as a result of the success of that approach, the portfolio strategy has been recognized by the Florida Department of Education and has been incorporated into the pre-service teacher education program at the University of Florida. (ER)

116. University of Delaware

The Master of Instruction program at the University of Delaware is yet another in-service program that employs a portfolio approach. Courses are specified in four core areas: the study of teaching; academic and behavioral assessment; behavioral management; motivation and discipline; and models of instruction. Curriculum design and development, formerly a core area, is now more appropriately stressed in the individualized component of the program, based on each student's goals.

The portfolio strategy enters in the assessment of students and in criteria for the Master's credential; for each candidate is required to demonstrate evidence of improvement in classroom instruction through the portfolio. No other master's program at the University, it is claimed, requires such demonstration of the uses of knowledge gained.

117. University of California at Irvine

The Teacher Intern Program at Irvine is a graduate level program that nonetheless points to an interesting possibility for the selection process. In operation since 1968, it involves the University in a cooperative arrangement with five school districts. While the materials submitted to the Commission never say so directly, it appears that a student's admission to the program is a joint decision of the University and the school districts.

We were at first intrigued with the requirements that candidates for admission to this program had to present a 3.0 average and an undergraduate degree in the Liberal Arts (with certain subject distributions), and that an undergraduate degree in education was not acceptable for admission. After all, such requirements address the problem of subject matter mastery for future teachers. But it turns out that the distribution requirements (beyond the major) can be waived by passing parallel sub-tests of the National Teacher Exam (General Education Section) with scores of 62 or better. That option places a

tremendous burden on an examination with which everyone has to be comfortable. The University also requires prior completion of college level courses in U.S. History and U.S. Government, but these, too, can be waived by examination.

The program itself consists of a set of courses addressing curriculum and teaching skills that are contained within a full-year internship with a stipend provided by the school district. In other words, the student never takes a "course" outside the school setting itself (unless granted special permission to attend evening classes at the University). The program does not award a graduate degree, rather an education "credential"--single or multiple subject.

APPENDIX A

The National Commission on Excellence in Education

Items to be Covered in Profile of Notable Program

1. Title of Program/Name of Institution/Address/Phone/Contact Person

2. Problem(s) addressed by the program. Please be as specific as possible. How did you identify the problem(s)?

3. Objectives of the program.

4. Program history and organization. Key dates and steps involved in planning, implementation, evaluation and revision of this specific operation. Is the program based on a model or proposal from a national, regional, statewide or other source outside the institution at which it operates?

5. Specific population(s) for whom the program was developed. What specific criteria (including academic, personal, or other considerations) are used for the inclusion of individuals in the program?

6. Essential characteristics of the program:

   (a) Who does what? where? and when?
   (b) Describe the academic content of the program, the materials and facilities employed, the system of management and organization.
   *(c) What theories or assumptions (if any) lie behind the content and method of the program?
   (d) Special characteristics and training required of instructors and other personnel.
   (e) Special strategies, methods, diagnostic tools, assessment instruments.

7. Program results: the Commission is charged with identifying and examining those programs from which students later achieve "uncommon success."

   *(a) Please cite concrete evidence of the achievement of students while they are in the program. Please note any data you have on students' success after leaving the program. How long have you been keeping data of this type?
   *(b) How does the achievement cited in (a) exceed the achievement normally expected of the target student population? How do you know? This is an extraordinarily important question.
   (c) What other measures do you use to determine how well the program is meeting its objectives? What have you found?
   (d) Who collects and analyzes information and data on the effectiveness of the program?

8. Secondary benefits

   (a) What role does this program play in terms of fulfilling the overall objectives of the institution[s] in which it operates?
   (b) What role does this program play in fulfilling the professional aspirations of teachers, administrators, or other participating parties?
   (c) What unintended consequences (positive or negative) accompanied the creation or operation of this program?

9. Which characteristics of the program do you think contribute most to its success (or, if the program failed to achieve its objectives, why do you think that happened)?

10. Transportable features

   (a) What kinds and amounts of resources, funds, facilities, etc. does the program require?
   (b) To what kinds of institutions, situations, and students is this program applicable?
   (c) What barriers to its success might exist in other settings?

*For programs in which students are the primary beneficiaries, these are the most important questions.

APPENDIX B

UNITED STATES DEPARTMENT OF EDUCATION
NATIONAL COMMISSION ON EXCELLENCE IN EDUCATION
WASHINGTON, D.C. 20208

April 29, 1982

Prof. Earl Zwicker
Illinois Institute of Technology
3300 Federal St.
Chicago, Ill. 60616

Dear Prof. Zwicker,

In preparation for a public hearing on the topic of college admissions and the transition from secondary to postsecondary education (to be held in Chicago on June 23), the National Commission on Excellence in Education is seeking to identify a sample of notable programs addressing problems associated with the transition to higher education, particularly those programs involving cooperative relationships between high schools and colleges. A flyer announcing that search is enclosed.

The College-High School Teachers Interaction Project (CHIP) has been brought to our attention in this regard as one from which the Commission might learn a good deal, and we are thus soliciting a profile of that program from you.

Before discussing the nature of that profile, some words about the Commission and its concern for notable programs is in order. The Commission was appointed in August of 1981 by U.S. Secretary of Education, Terrell H. Bell, to make "practical recommendations" to the nation by March of 1983 about ways and means of pursuing excellence in education. As part of its Charter, Secretary Bell asked the Commission "to review and to describe educational programs that are recognized as preparing students who . . . meet with uncommon success. . . ." The Commission has decided to apply this provision broadly, so as to include notable programs for high-achieving students, average students and the academically disadvantaged. Thus, criterion-referenced measures, norm-referenced meansures, and "value-added" measures of student performance in a program are all appropriate for identification of notable programs. In addition, the Commission is interested in evidence of the long-term effect of programs on student performance.

It is important to note that in soliciting profiles of exemplary programs, the Commission seeks to understand what elements of those programs might account for noteworthy achievement of students who complete them. The Commission intends to use its understanding to illustrate general propositions and to make recommendations encouraging energetic efforts to pursue excellence. Therefore, although the final report of the Commission will cite the programs from which it has received profiles, the Commission is not in a position to validate those programs.

On the attached page you will find a guide for preparing a profile of your program. We would deeply appreciate it if you would send that profile to us no later than June 4, 1982 so that it can be analyzed in time for the Chicago hearing.

The profile format is designed for site-specific programs (a school, a district, a college, etc.). The format can easily be adapted for profiling national, regional or statewide programs which are in use at many sites. In all cases, however, evidence of the impact of the program on students is required. In other words, while not all items cited in the profile outline may be relevant to your program, consider item #8 on the profile outline to be the most critical.

There is no rigid order for responding to the items. Whatever you find most comfortable, comprehensive, and persuasive would be appropriate. The Commission staff has set but two requirements: (1) that the profiles be limited to 10 pages, and (2) that there be a separate title page with a one-paragraph (150-200 word) abstract typed on the bottom half of the page. You understand, of course, that such requirements are a by-product of the volume of material with which the Commission must deal.

If you have any questions during the time you are preparing the profile, please do not hesitate to call me at (202) 254-5555.

We look forward to receiving your paper, and thank you in advance for your time and effort.

Sincerely,

Clifford Adelman
Senior Staff

APPENDIX C

AMERICAN COUNCIL ON EDUCATION
Office of the President

September 17, 1982

Dear Colleague:

Re: Notable Academic Programs

The American Council on Education has agreed to assist the National Commission on Excellence in Education in identifying notable programs and promising approaches to key problems in postsecondary education.

The Commission was appointed in August of 1981, by U. S. Secretary of Education Terrel H. Bell to make "practical recommendations" to the nation by March of 1983, about ways and means of pursuing excellence in education. As part of its charter, Secretary Bell asked the Commission "to review and to describe educational programs that are recognized as preparing students who achieve uncommon success. . . ." The Commission has decided to include in its survey notable programs for high-achieving students, average students, and the academically disadvantaged. In addition, the Commission is interested in evidence of the long-term effects of programs on student, faculty, and institutional performance.

I know that this request is an added burden, but Secretary Bell's interest is genuine, and we have agreed to lend our good offices in this endeavor. The problems of interest to the Commission have been identified from a series of public hearings and panels and dozens of commissioned papers. The programs and approaches in which the Commission has interest are listed on the enclosed flyer.

If your institution has developed a program or approach that falls into one or more of the categories listed on the attached, and you would like to have it cited by the Commission, the Commission would be very pleased to receive a program profile. The Commission will make its final recommendations based on long established activity only; the Commission is not in a position to validate programs.

The Commission seeks to understand what elements of those programs might account for the achievement of students who complete them. The Commission intends to use this information to make recommendations encouraging the pursuit of excellence. Profiles received no later than October 29, 1982, will be presented to the Commission in its November meeting. The Commission will select some to cite in its final report. Please limit your response to not more than ten pages; there should be a separate title page with a one-paragraph abstract typed on the bottom half of the page.

If you have any questions during the time you are preparing the profile, please do not hesitate to call Clifford Adelman at the National Institute of Education (202) 254-5555. Should you choose to contribute to this undertaking, I thank you for your interest and effort.

Cordially,

J. W. Peltason

J. W. Peltason

Enclosure

One Dupont Circle, Washington, D.C. 20036-1193
President (202) 833-4710 Vice President (202) 833-4712

NATIONAL COMMISSION SEEKS EXAMPLES OF NOTABLE PROGRAMS IN HIGHER EDUCATION

The National Commission on Excellence in Education seeks examples of promising approaches and notable programs conducted by the nation's community colleges, colleges, and universities in the areas listed below. While the Commission recognizes that the agenda of higher education is vast, it has chosen to focus its attention on those issues and problems that both fall within its Charter and on which it must gather further information before arriving at its final report and recommendations.

I. Academic Content

1. Programs designed to reconcile the goals of career and liberal arts education;
2. Programs--conducted jointly with high schools--designed to eliminate redundancies in secondary school and college curricula;
3. Programs and approaches designed to increase the scientific and technological literacy of students outside the science and engineering fields;
4. Systematic approaches designed to increase students' creative thinking abilities;
5. Competing models of general/liberal education within the same institution;
6. Cooperative efforts with industry to improve college science education.

II. Academic Time

1. Alternatives to the time-based system of credits and credentials, i.e. ways of accounting for learning in higher education other than credits;
2. Programs for assisting students in managing their academic and study time;
3. Variations on traditional instructional time; sytematic variations on any of the traditional forms of the academic calendar.

III. Assessment

1. The use of exit examinations (degree qualifying exams) other than those in the major;
2. The use of standard college entrance examinations for purposes other than admissions;
3. The use of value-added systems of assessment;
4. Systematic approaches to assessing the outcomes of general education.

IV. Pedagogy

1. Components of graduate programs designed to train future college instructors in pedagogy and other related educational subjects;
2. Programs relying heavily on innovations in instructional technology other than those in mathematics, the sciences, and basic skills (except where "basic skills" have been redefined to include information processing).

V. Teacher Education

1. Approaches to increasing subject-matter content in teacher education programs;
2. Improving teacher education through initial selection and/or exit examinations.

VI. Special Constituencies

1. Undergraduate programs conducted jointly by colleges and employers for the benefit of employees (not college students);
2. Programs directed at increasing the rate of transfer and retention of community college students;
3. Programs directed at "gifted" students (the Commission has already gathered sufficient numbers of profiles of programs directed at underprepared students).

VII. Other

1. Institutional procedures to reward faculty for outreach activities vis-a-vis elementary and secondary education, including in-service teacher training in the content of th specific disciplines (but excluding pre-service teacher training and supervision);

2. Institutional procedures designed to encourage the development and maintenance of such public virtues as honesty and respect among students, faculty, and administrators.